

Application for Part 70 Combined
Source Modification and
Permit Modification - REVISED
DDG Dryer Construction

MGPI of Indiana, LLC
Operating Permit: 029-32119-00005
Lawrenceburg, Indiana

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1 Introduction

MGPI of Indiana, LLC (MGPI) owns and operates a stationary distilled spirits production facility located in Lawrenceburg, Indiana (see Figure 1). The facility is currently authorized to operate as a Title V major source) under Part 70 Operating Permit 029-32119-00005, which the Indiana Department of Environmental Management (IDEM) issued on June 20, 2014. Emissions of the following pollutants are permitted above Title V major source levels: particulate matter less than 10 microns (PM₁₀), particulate matter less than 2.5 microns (PM_{2.5}), volatile organic compounds (VOC), nitrogen oxides (NO_x), and hazardous air pollutants (HAPs). The MGPI facility is located in Dearborn County Lawrenceburg Township, which is designated marginal nonattainment for the National Ambient Air Quality Standard (NAAQS) for ozone and attainment for all other criteria pollutants. The facility is an existing major source under Prevention of Significant Deterioration (PSD) permitting requirements (promulgated in 326 IAC 2-2), because the permit limited potential to emit (PTE) of at least one attainment pollutant is at a level greater than its PSD major source threshold. The facility is similarly an existing major stationary source under the Emission Offset requirements (promulgated in 326 IAC 2-3), since emissions of VOC and NO_x exceed the applicable 100 tpy threshold.

Representatives from MGPI held a pre-application meeting with Ms. Jenny Acker and Mr. Matthew Stuckey of IDEM on December 11, 2014 to discuss the project proposed in this application, to review preliminary drafts of the technical content comprising Appendix C and D, and to discuss MGPI's Best Available Control Technology (BACT) analysis. This application has been prepared to incorporate guidance received during the pre-application meeting.

Subsequent to submittal of a permit application in December 2014, MGPI has had correspondence with Kristen Willoughby, Senior Environmental Manager at IDEM, regarding the representations made in the December 2014 application. As a result of these discussions, MGPI is submitting this revised permit application for the project.

1.1 Source Modification and Permit Modification Request

MGPI is submitting this application for a Part 70 combined source modification and permit modification for the proposed construction of a new distiller's dried grain (DDG) dryer. The proposed project will include installation of one new direct-fired DDG dryer, which will be equipped with cyclone and regenerative thermal oxidizer (RTO) controls. The installation of the new dryer will not affect the facility's production capacity; existing equipment will continue to dewater and convey stillage from the facility's distillation operations to the proposed dryer for drying, and the proposed dryer will not cause an increase in the facility's drying capacity or otherwise debottleneck facility operations. Downstream of the proposed dryer, the existing cooler and DDG transport system (portion of EU-32) will continue to operate at current capacities, and once DDG is produced in the dryer, it will be cooled, transported, stored, and loaded for off-site shipment using existing equipment.

MGPI intends that the proposed direct-fired dryer will be the primary means of producing DDG. However, to provide maximum operational flexibility, MGPI requests that the existing steam tube dryer operation (portion of EU-32) remain available to operate in the event the direct-fired dryer experiences downtime for maintenance. Additional details on the project are provided in Section 3.1.

The potential to emit (PTE) for the proposed project before controls, after controls, and after issuance of the requested permit is presented in Table 1. Since the proposed modification will be subject to 326 IAC 8-1-6 (new facilities; general reduction requirements), MGPI understands that this source modification is of a type addressed under 326 IAC 2-7-10.5(g) that IDEM will process according to the provisions of 326 IAC 2-7-10.5(h). MGPI is requesting that the preconstruction approval and operating permit revision for this project be combined, therefore this application includes the information as required under 326 IAC 2-7-10.5(d)(2).

2 Facility and Source Description

The MGPI facility is engaged in production of distilled spirits. This application focuses solely on the DDG dryer operations that are the subject of the proposed modification. A site layout of the MGPI facility is included in Figure 2 (as referenced in Form GSD-02 in Appendix A), and a process flow diagram for the proposed new dryer operations is included in Figure 3 (as referenced in Form GSD-03 in Appendix A).

Currently, still bottoms are conveyed from the distillation stills (EU-20, 25 – 29), through initial dewatering, and then to the DDG dryers (collectively EU-32). The existing dryers are each steam tube rotary units, with the steam supplied by the existing facility boilers (EU-96 and EU-97). After drying, the DDG is sent through a cooler (included within EU-32) prior to storage and loading for off-site shipment. The rotary dryers are each equipped with scrubbers for particulate emission control, and the cooler is equipped with a cyclone for particulate control.

2.1 Proposed Project Modification

MGPI is proposing to install one new direct-fired DDG dryer (proposed EU-39). Three new conveyors will feed wet distiller's grain to the proposed new dryer, where it will enter the dryer along with syrup from existing stillage processing and recycled product from the dryer itself. The unit will be equipped with a 45 MMBtu/hr natural gas-fired burner to accomplish the required drying.

Once dried, the DDG will be sent via enclosed conveyors to the existing DDG cooling and transport system (portion of existing EU-32). Existing equipment will be used to feed the DDG to a hammer mill (controlled by an existing cyclone) for milling, then on to a rotating drum cooler (which is a passive system that is not supplied with a source of forced air ventilation), and then to the existing DDG silos and surge hoppers (existing EU-34) for storage. From storage, the DDG will be transported and loaded onto either railcars or trucks for shipment off-site at existing load out stations (EU-35, EU-36, EU-37, and EU-38).

The production capacity of the new dryer will be equivalent to the capacity of the existing dryers; MGPI is not seeking an increase above currently permitted capacity with this application. Furthermore, upstream and downstream process operations will not be modified as part of this project. The stillage processing and conveying upstream of the dryer, as well as the DDG cooling/transport system and DDG storage/loading operations downstream of the dryer, will remain unchanged.

The exhaust from the new dryer will be routed through four cyclones to control PM emissions, then on to a new RTO for control of VOC, CO and HAP emissions. A portion of the exhaust stream will be recirculated as tempering air back to the dryer burner. The RTO will exhaust to a new stack where the dryer emissions will be vented to atmosphere.

During periods when the direct-fired dryer must be taken out of service for maintenance, MGPI will use the existing steam tube dryers so that facility operations are not interrupted. MGPI will not operate the new and existing dryers concurrently. The existing dryers will become stand-by units to cover operations when the new dryer is off-line and will not be modified as part of this project. Section 4.2 contains a discussion of the operating limitation MGPI will accept on the

steam tube dryer throughput so that the proposed project does not trigger Prevention of Significant Deterioration (326 IAC 2-2) or Emissions Offset (326 IAC 2-3) requirements.

3 Emission Estimates

A summary of MGPI's site-wide potential to emit (PTE) is provided in Table 1 of this application, including emissions of criteria pollutants (NO_x, CO, SO₂, VOC, Total PM, PM₁₀, and PM_{2.5}), total emissions of hazardous air pollutants (HAPs), and emissions of greenhouse gases (GHGs). Table 1 includes potential emissions before controls, potential emissions after controls, and requested potential emissions after permit issuance. Detailed emission estimates for the emission sources included in this project are found in Tables C-1 through C-7b of Appendix C. Emission estimates for other sources are not provided; the emission rates shown for these sources in Table 1 are consistent with those documented in the Technical Support Document (TSD) that IDEM issued with permit renewal number T029-32119-00005 dated June 20, 2014.

3.1 DDG Dryer Emission Estimates

Emissions of criteria pollutants from the proposed DDG Dryer, provided in Table C-1, are calculated using controlled emission factors and associated control efficiencies as provided by the equipment vendor (ICM, Inc.). The factors account for total dryer emissions, comprised both of contributions from DDG drying and from the natural gas combustion that occurs in the burner for the direct-fired dryer and the RTO burner. Factors expressed on a heat input basis (lb emitted per MMBtu fired) are multiplied by the dryer's design maximum firing rate (dryer and RTO burners) to obtain a mass emission rate. Factors expressed on a throughput basis (lb emitted per ton of DDG produced) are multiplied by the maximum dryer DDG production rate to obtain a mass emission rate. Annual emissions assume that the dryer operates at maximum capacity for the entirety of the year. Emissions of HAPs from the proposed DDG dryer, provided in Table C-2, are similarly calculated using controlled emission factors and associated control efficiencies provided by the equipment vendor. As seen in Table C-2, emissions of individual HAPs acetaldehyde, formaldehyde, acrolein, and methanol are calculated by multiplying the respective emission factor (lb emitted per ton of DDG produced) by the maximum dryer production rate. Total HAP emissions also include HAPs emitted solely by natural gas combustion, using the emission factors from AP-42 Tables 1.4-2 through 1.4-4.

Greenhouse Gas (GHG) emissions from the proposed DDG dryer are provided in Table C-3. Estimated GHG emission rates are calculated using the design firing rates of the dryer and RTO burners and emission factors taken from Tables C-1 and C-2 of 40 CFR Part 98. CO_{2e} emissions are calculated by applying the global warming potential (GWP) of each GHG to its mass emissions as prescribed by the United States Environmental Protection Agency (USEPA) in the Federal Register dated November 29, 2013 (78 FR71950).

3.2 DDG Cooler and Transport System Emission Estimates

Emission estimates for the DDG cooler and transport system located downstream of the direct-fired dryer are provided in Table C-4 and C-5. While existing equipment will continue to be used, emissions from these sources have not historically been estimated separately and were instead included as part of the steam tube dryer aggregate emissions from EU-32. Because the direct-fired dryer emissions are now being estimated independently, estimates for cooler and transport emissions are being provided at this time.

Uncontrolled and controlled emissions of PM, PM₁₀ and PM_{2.5} are included in Table C-4. Estimates use emission factors presented in AP-42 Table 9.9.1-1 (Grain Elevators and

Processes). The grain conveying factors assume no control, so controlled and uncontrolled emissions are equivalent. Emissions from hammer milling are calculated using the AP-42 Table 9.9.1-1 controlled emission factor for PM, the suggested pre-control particle size distribution from AP-42, Appendix B.2, Table B.2.2 for Category 7 (Grain Processing), and the suggested particle size-specific control efficiencies for a high efficiency centrifugal collector from AP-42, Appendix B.2, Table B.2.3. Uncontrolled and controlled PM, PM₁₀, and PM_{2.5} emission factors were calculated as presented in Table C-4.

The existing DDG cooler is not equipped with forced air ventilation; rather the DDG only experiences radiative cooling as it is conveyed through the unit. Therefore the AP-42 conveying factors are used to quantify fugitive particulate that may be emitted from the process.

VOC and HAP emission estimates from the DDG transport and cooling operations are provided in Table C-5. VOC emissions are calculated using emission factors taken from a similar operation permitted in Indiana (POET Biorefining – North Manchester, Permit #T169-31191-00068). HAP emissions are calculated as a percentage of total VOC emissions, by assuming that the individual HAPs emitted from cooling/transport operations are in the same proportion as those emitted from drying operations.

3.3 Wet Cake Emission Estimates

Emissions of VOCs and HAPs from wet cake operations have been presented in Table C-6, accounting for emissions that can result during dryer shutdown and startup at times when the dryer throughput is diverted to a wet pad (see Figure 3) to ensure that the wet feed is not sent to dry storage. Uncontrolled emission factors for VOCs and HAPs from wet cake operations have been taken from a similar operation permitted in Indiana (POET Biorefining – Alexandria, Permit # T095-30443-00127). While hourly dryer feed is assumed to be at its maximum, the annual feed assumes that wet cake production is limited to 500 hr/year.

3.4 Steam Tube Dryer Emission Estimates

Because the existing steam tube dryers will be used as a backup unit to the proposed direct-fired dryer, estimates of emissions from the existing equipment are provided in Table C-7a (PTE) and Table C-7b (Limited PTE after issuance of permit). Emissions are estimated consistent with the IDEM TSD that IDEM issued with permit renewal number T029-32119-00005 dated June 20, 2014.

4 Regulatory Analysis

This section of the application summarizes the applicability and non-applicability of state and federal regulations to the dryer project.

4.1 Federal Regulations

4.1.1 New Source Performance Standards

The proposed new DDG dryer will not be subject to requirements of 40 CFR 60 standards.

4.1.2 National Emission Standards for Hazardous Air Pollutants

The proposed DDG dryer will not be subject to requirements of 40 CFR 63 standards. Since the unit is direct-fired and is not used to generate steam, it does not meet the definition of either “boiler” or “process heater”; therefore the requirements of 40 CFR 63 Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters) do not apply.

Since no Part 63 Maximum Achievable Control Technology (MACT) standards apply to the proposed project, the “case-by-case” MACT provisions under Section 112(g) of the Clean Air Act potentially apply to the proposed project. However, as shown in this application, the potential dryer HAP emissions after control by the RTO will be well below the applicable major source thresholds (10 tpy of any individual HAP or 25 tpy of total HAP). Accordingly, Section 112(g) case-by-case MACT requirements do not apply because the project itself does not constitute construction of a new major HAP source.

4.1.3 Compliance Assurance Monitoring

The proposed direct-fired dryer is potentially subject to Compliance Assurance Monitoring (CAM) requirements under 40 CFR 64. The unit will use a control device to achieve compliance with the requirement for BACT (under 326 IAC 8-1-6, as described in Section 4.2.6 and Section 5), and as shown in Table 1, has potential pre-control device emissions for VOC that are greater than the 100 tpy Part 70 major source threshold. MGPI understands that as part of the Source Modification and Part 70 Permit Modification, IDEM will require the following monitoring of the RTO:

- Continuous monitoring of RTO combustion chamber operating temperature to assure that the VOC destruction efficiency is maintained at or above the level measured in the most recent stack test. This parameter monitoring system will include acquisition of temperature data no less than once per fifteen minutes. The output of the monitoring system will be recorded as a 3-hour block average. MGPI must operate the RTO at or above the 3-hour block average temperature as observed during the unit’s initial stack test.
- Monitoring of the appropriate RTO inlet duct static pressure or RTO fan amperage to assure sufficient flow is maintained to capture all of the VOC / HAP emission from the DDG dryer. This parameter monitoring system will include acquisition of static pressure or fan amp data at least once per day when the RTO is in operation. The daily duct pressure or fan amperage must be maintained within the normal range as established during the unit’s initial stack test.

With these monitoring requirements in place and with enforceable limits on the emissions from the RTO stack, MGPI understands that CAM requirements will be satisfied.

4.2 Indiana State Regulations

4.2.1 Prevention of Significant Deterioration (326 IAC 2-2)

The MGPI facility is located in Dearborn County Lawrenceburg Township, which is designated as attainment or unclassifiable for the NAAQS for nitrogen dioxide, CO, lead, PM, PM₁₀, PM_{2.5}, and sulfur dioxide. A PSD permit is required for a project that constitutes a new major source or major modification to an existing major source. Under PSD rules, a major source is defined as any one of the following:

1. Any stationary source that is located or proposed to be located in an attainment or unclassifiable area as designated in 326 IAC 1-4 and that emits or has the potential to emit 100 tons per year or more of any regulated NSR pollutant (326 IAC 2-2(ff)(1));
2. Any stationary source with the potential to emit 250 tons per year or more of a regulated NSR pollutant (326 IAC 2-2(ff)(2)); or
3. For any stationary source that does not meet the definition of 1) or 2), any physical change that would constitute a major stationary source by itself (326 IAC 2-2(ff)(5)).

Distilled spirits production plants are not included on the list of 28 source categories under 326 IAC 2-2(ff)(1). However, the MGPI facility does have the potential to emit over 250 tpy of PM, PM₁₀, PM_{2.5}, and NO_x and therefore is an existing major source under the PSD rules.

A major modification is defined under 326 IAC 2-2(dd) as follows:

...any physical change in, or change in the method of operation of, a major stationary source that would result in a significant emissions increase and a significant net emissions increase of a regulated NSR pollutant from the major stationary source.

As an existing PSD major source, MGPI is required to assess whether the proposed dryer project has the potential to increase emissions of any regulated PSD pollutant. If the project emissions increase or the project net emissions increase for each PSD pollutant is less than its significant emission rate, the project would not be subject to PSD review. MGPI has assessed the dryer project emission increases by comparing the projected actual emissions following the dryer installation to the past actual emissions (those occurring during the highest 24-month baseline period of January 2013 through December 2014 for all pollutants).

The results of the PSD applicability analysis, summarized in Table 2 and provided in Appendix D, show that the project emissions increases will be below the applicable PSD significance levels for the PSD pollutants other than PM_{2.5}.

As shown in Table 2, the PM_{2.5} project emissions increase is greater than the 10 tpy PSD significance level. MGPI therefore performed a netting analysis as documented in Table D-3 to determine the net emissions increase over the 5 year contemporaneous period. When creditable emission increases and decreases over this period are included, the net emissions

increase for PM_{2.5} (documented in Table 2 and Table D-3) is lower than the 10 tpy significance level. The netting analysis includes a proposed limitation on steam tube dryer operation where the feed to the existing steam tube dryers will be limited to 147,000 ton/yr, resulting in a creditable decrease in PM_{2.5} emissions compared to baseline actual emissions.

Because the project is not a physical modification that results in a significant emissions increase or a significant net emissions increase, it does not trigger PSD permitting requirements for any pollutant.

4.2.2 Emission Offset (326 IAC 2-3)

The MGPI facility is located in Dearborn County Lawrenceburg Township, which is designated as nonattainment for the NAAQS for ozone (2008 8-hour standard). The Emission Offset/Nonattainment New Source Review (NNSR) rules potentially apply to the proposed dryer project. The MGPI facility has the potential to emit over 100 tpy of VOC and NO_x and therefore is an existing major source under the Emission Offset rules. Therefore, MGPI is required to evaluate VOC and NO_x emissions to determine whether the proposed dryer project has the potential for an increase in emissions. If the project emissions increases or project net emissions increases for VOC and NO_x are below their respective significant emission rates, the project would not be subject to Emission Offset provisions.

The results of the NNSR applicability analysis, summarized in Table 2 and provided in Appendix D, show that the project emissions increases for VOC and NO_x will be below the applicable significance levels. Therefore, the project does not represent a physical modification that results in a significant emissions increase, and does not trigger Emission Offset requirements.

4.2.3 Prevention of Significant Deterioration for Greenhouse Gases (40 CFR 52)

The Supreme Court ruled on June 23, 2014 (*Utility Air Regulatory Group v Environmental Protection Agency*) that USEPA could not change the major source thresholds legislated in the Clean Air Act as it had done in the Federal Tailoring Rule (75 FR 31514, June 3, 2010). The ruling further stated that USEPA could not treat greenhouse gases as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD permit, but that USEPA could continue to require that PSD permits, otherwise required based on emissions of conventional pollutants, contain limitations on GHG emissions based on the application of BACT.

In a July 24, 2014 memorandum, USEPA expressed the agency's intent to act consistent with its understanding of the Supreme Court's decision. USEPA will no longer apply or enforce regulatory provisions that require a stationary source to obtain a PSD permit if greenhouse gases are the only pollutant that (a) the source emits or has the potential to emit above the major source thresholds, or (b) for which there is a significant emissions increase and a significant net emissions increase from a modification. Nor will USEPA continue to apply regulations that would require that states include in their State Implementation Plans a requirement for such sources to obtain PSD permits.

The emission increases of conventional pollutants resulting from the proposed project at MGPI do not trigger PSD permitting requirements for conventional pollutants. Therefore, consistent

with the Supreme Court decision, the project does not trigger PSD permitting requirements (application of BACT) for GHG. Moreover, the increase in GHG emissions associated with the project are not high enough to have triggered GHG BACT in the absence of the court decision.

4.2.4 Pollutant-Specific General Limitations

The following pollutant-specific general emission limitations apply to the proposed dryer project at MGPI:

- Particulate Matter Emission Limitations for Manufacturing Processes (326 IAC 6-3-2)

The particulate emissions from the proposed dryer, as shown in Table C-1, will comply with the applicable process weight rate-based limit calculated according to 326 IAC 6-3-2(e). The proposed project will similarly not affect the on-going compliance of the DDG cooler and transport system with the applicable process weight rate-based limit. These limits are shown below:

Emission Unit	Unit Description	Process Weight Rate (ton/hr)	Allowable Particulate Emission Rate (lb/hr)
EU-39 (Proposed)	Direct-fired DDG Dryer	24.56 (Dryer feed)	35.0
EU-32	DDG Cooler and Transport System	9.56 (DDG throughput)	18.6

- Preventive Maintenance Plan (326 IAC 2-7-5(12))

As required under 326 IAC 2-7-5(12), MGPI will maintain on-site the preventive maintenance plans required under 326 IAC 2-7-4(c)(8), implement the preventive maintenance plans, and forward a plan to IDEM upon request. The plans, addressing the proposed RTO and the cyclone operating within the cooler/transport system, will include the following content required under 326 IAC 1-6-3(a):

- Identification of the individual(s) responsible for inspecting, maintaining, and repairing the emission control device
- A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions
- Identification and quantification of the replacement parts which will be maintained in inventory for quick replacement.

The VOC emission reduction requirements of 326 IAC 8-5-6 do not apply to the proposed project since MGPI is not a fuel grade ethanol production facility.

4.2.5 Opacity Limitations (326 IAC 5-1)

As specified under 326 IAC 5-1-1(c)(2), visible emissions from the proposed DDG dryer stack will be required to comply with the opacity requirement of 326 IAC 5-1-2(2), which limits opacity to 30% opacity in any one six-minute averaging period as determined in 326 IAC 5-1-4. Opacity

shall not exceed 60% for more than a cumulative total of 15 minutes (60 readings as measured according to 40 CFR 60, Appendix A, Method 9) in a six-hour period.

4.2.6 New Facilities General Reduction Requirements (326 IAC 8-1-6)

The proposed dryer is subject to the general VOC reduction requirements under 326 IAC 8-1-6, which provide that a new facility not otherwise regulated by a standard under 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56 must reduce VOC emissions using Best Available Control Technology (BACT). Section 5 of this application has been prepared in response to this requirement. Completed IDEM BACT Analysis permit application forms are included in Appendix B.

5 BACT Analysis

The IDEM regulations at 326 IAC 8-1-6 impose general VOC reduction requirements for new facilities (constructed after January 1, 1980) having a potential to emit greater than 25 tpy VOC. Specifically, such facilities must use BACT to reduce VOC emissions. As discussed previously, the potential VOC emissions from the proposed direct fired dryer prior to emission controls is greater than 25 tpy, and therefore MGPI is required to perform a top-down BACT analysis to identify the level of control required.

Before discussing the proposed VOC BACT that MGPI has selected for the direct fired dryer, a general overview of the top-down BACT approach is provided in Section 5.1. A technical review of the potentially applicable controls for the dryer VOC emissions is presented in Section 5.2, with technically infeasible options eliminated in Section 5.3. The remaining technologies are ranked and evaluated in Section 5.4 and the selection of BACT is presented in Section 5.5.

5.1 BACT Defined

BACT is defined under 326 IAC 1-2-6 as "an emission limitation (including a visible emission standard) or equipment standard based on the maximum degree of reduction of each pollutant subject to regulation... which the commissioner, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs, determines is achievable for such facility or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant." Four key aspects of the definition for conducting a BACT analysis are the following:

- BACT is an "emission limitation" based on a control technology and not the control technology itself; if technological or economic limitations on the application of measurement methodology to a particular emissions unit would not be feasible, a design, equipment, work practice, operation standard, or combination thereof may be prescribed.
- BACT is based on the "maximum degree of emissions limitation achievable...". Economic, environmental, and energy impacts are taken in to account, but equal emphasis is also placed on the words "maximum" and "achievable."
- BACT includes and, in fact, focuses on "production processes..." along with add-on controls.
- BACT was intended to be a case-by-case evaluation, implying individual case evaluations and decisions, not rigid, pre-set guidelines.

5.1.1 "Top-Down" Method for Determining BACT

The "top-down" method of determining BACT consists of identifying the methods that can be applied or have been applied for control of a particular pollutant. The methods are then ranked from most effective to least, with the most effective control technology as the "top" option. Starting with the top control option, each method is reviewed for technical feasibility as well as for energy, environmental, and economic impacts. If the top option is eliminated after a review of these criteria, the next most effective control option is reviewed. This process continues until BACT is determined. The following steps, based on IDEM's BACT Analysis Application

guidance and consistent with IDEM's BACT permit application forms, further outline the steps in the top-down BACT process:

Step 1 – Identify Control Technologies

The first step in the top-down BACT approach is to define the spectrum of process and/or add-on control alternatives potentially applicable to the proposed emissions unit. The following categories of technologies are addressed in identifying candidate control alternatives:

- Demonstrated add-on control technologies applied to the same emissions unit at other similar source types;
- Add-on controls not demonstrated for the source category in question but transferred from other source categories with similar emission stream characteristics;
- Process controls such as combustion or alternate production processes;
- Add-on control devices serving multiple emissions units in parallel; and
- Equipment or work practices, especially for fugitive or area emission sources where add-on controls are not feasible.

A review of the EPA's RACT/BACT/LAER Clearinghouse (RBLC) database is usually the first step in this process.

Step 2 – Eliminate Technically Infeasible Options

The second step in the top-down BACT approach is to evaluate the technical feasibility of the alternatives identified in Step 1 and to reject those which can be demonstrated as infeasible based on engineering evaluation or on chemical or physical principles. The following criteria are considered in determining technical feasibility: previous commercial scale demonstrations, precedents based on previous permits, and technology transfer from similar sources.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Step 3 is an assessment and documentation of the emission limit achievable with each technically feasible alternative considering the specific operating constraints of the emissions units undergoing review. After determining what control efficiency is achievable with each alternative, the alternatives are rank-ordered into a control hierarchy from most to least stringent.

Step 4 – Evaluate Most Effective Controls and Document Results

Step 4 is to evaluate the cost/economic, environmental, and energy impacts of the top or most stringent technique. To reject the top alternative, it must be demonstrated that this control alternative is infeasible based on the results of the impacts analysis. If a control technology is determined to be technically infeasible or infeasible based on cost effectiveness, or to cause adverse energy or environmental impacts (including toxic pollutant impacts), the control technology is rejected as BACT and the impacts analysis is performed on the next most stringent control alternative.

Step 5 – Select BACT

The proposed BACT is the option with the highest control effectiveness that was not eliminated in step 4 due to adverse economic, environmental, and/or energy impacts.

5.2 Control Technology Evaluation

Based on a review of the RBLC database, a review of permits that IDEM has recently issued, and a general literature search, several add-on control alternatives are potentially applicable to control VOC emissions from the proposed direct-fired dryer. Any control technology chosen must be able to effectively reduce VOC emissions in the dryer exhaust stream given the following characteristics:

- Maximum flow rate of approximately 30,000 acfm;
- High dryer exhaust temperature (approximately 215°F);
- High moisture content resulting from water driven off from the DDG within the dryer;

The RBLC search did not locate entries for distilled spirits production, so the search instead focused on recent applications of BACT at DDG dryers located within dry mill fuel ethanol facilities. Though facilities engaged in fuel ethanol production are typically on a much larger scale than MGPI's facility, the process of producing DDG from spent stillage at MGPI shares a common principal of operation with the similar process at fuel ethanol plants. The technologies applied for control of VOC emissions from direct-fired DDG dryer exhaust at fuel ethanol plants are therefore considered to be potentially applicable for MGPI's proposed direct-fired dryer.

A description of candidate technologies is provided in the following sections.

5.2.1 Carbon Adsorption

Carbon adsorption is a mature technology that has been used for the last 50 years to recover solvents from solvent-laden air streams. Activated carbon, which has a high surface area-to-volume ratio and a preferential affinity for organics, can serve as a very effective adsorbent of low-solubility, high molecular weight VOM. Non-carbon adsorbents can also be used. A desorption process recovers the organic compounds from the adsorbent, which can then be reused. While the RBLC did not indicate any applications of carbon adsorption for control of direct-fired dryer VOC emissions, it is an established VOC control technology. Therefore, carbon adsorption is considered to be a potentially applicable technology for control of VOC emissions from MGPI's proposed direct-fired dryer.

5.2.2 Wet Scrubbing

Wet scrubbers absorb VOC such as that emitted by the proposed direct-fired dryer (ethanol with lesser amounts of acetaldehyde, formaldehyde, acrolein, and methanol) into an absorbing liquid like water. Effective absorption requires a large gas to liquid surface area to optimize the mass transfer of the pollutant from the gas to the liquid phase. Gas/liquid contact is enhanced through the use of hydraulic sprays, trays, or packing in the scrubbing tower to create a large surface area while minimizing the liquid flow rate. Wet scrubbing applications for control of VOC emissions from direct-fired dryers were not identified in the RBLC. Application of scrubber technology has been used to control VOC emissions from other operations within ethanol

manufacture in general (typically to control VOC emitted during fermentation operations). IDEM's regulations at 326 IAC 8-5-6(c)(2) provide for the use of web scrubbing as a means to comply with the requirement for dry mill fuel grade ethanol production plants that meet the applicability provisions under 326 IAC 8-5-6(a) to control VOC emissions by no less than 98%. Wet scrubbing is therefore considered to be potentially applicable for MGPI's proposed direct-fired dryer.

5.2.3 Thermal or Catalytic Oxidization

In a thermal oxidizer, the VOCs in a gas stream are subjected to high temperatures in the presence of oxygen. The VOC is oxidized to carbon dioxide and water, with the generation of combustion byproducts.

An RTO is a more energy efficient technology than a thermal oxidizer. Within an RTO, the vent gas stream passes through one of two chambers filled with ceramic packing where it is pre-heated to temperatures approaching the desired combustion chamber set point before passing into a central combustion chamber. Some of the VOC is oxidized in the pre-heat chamber, while the remainder is oxidized in the central combustion chamber. Following combustion, the vent gas is passed through the second ceramic packing chamber and transfers its heat to the ceramic material. The RTO then cycles and the lead and lag chambers are switched, so that the second chamber provides pre-heating to the vent gas stream and the first is heated by the gas downstream of the combustion chamber. The cycling occurs so that the RTO system approaches steady-state conditions and the energy efficiency of the unit is optimized.

IDEM's regulations at 326 IAC 8-5-6(c)(2) provide for the use of thermal oxidation as a means to comply with the requirement for dry mill fuel grade ethanol production plants that meet the applicability provisions under 326 IAC 8-5-6(a) to control VOC emissions by no less than 98%. Thermal oxidation is the overwhelmingly predominant control device used at fuel ethanol plants to control direct-fired dryer VOC emissions. In the completed application form BACT-01 (Summary of Existing BACT Determinations) in Appendix D, the five BACT Determinations that are listed from an RBLC search each specify the use of a thermal oxidizer. Of these, 3 require 98% control, one requires 95% control, and one requires that a lb/MMBtu emission limit be met. Similarly, a survey of recent air permits for fuel ethanol plants in Indiana shows that thermal oxidation is the dominant control technology in use. A sample of recent permits for plants equipped with thermal oxidization control of dryer VOC emissions is included in Table 3, including a listing of the required level of VOC control.

5.2.4 Condensation

In condensation, the VOC in the exhaust stream undergoes a change from gaseous phase to liquid phase driven by a decrease in temperature, increase in pressure, or a combination of both. Condensers are most effective on VOCs that have relatively low vapor pressure (i.e., will condense without the need to a high level of cooling) and are present near their saturation level in the vent stream. While the RBLC did not indicate any applications of condensation for control of direct-fired dryer VOC emissions, it is an established VOC control technology. Therefore, condensation is considered to be a potentially applicable technology for control of VOC emissions from MGPI's proposed direct-fired dryer.

5.2.5 Flaring

Flaring is a common VOC control device in which a VOC-containing vent stream is vented to an open flame where it is combusted. Auxiliary fuel is commonly required to ensure an adequate heat content of the vent stream, and steam or air is added to promote mixing within the vent stream to increase the completeness of combustion (and therefore increase the level of VOC destruction). Flare performance depends on the flame temperature, the residence time of the vent gas in the combustion zone, the degree of mixing within the gas stream, and the amount of oxygen available to prevent free radical formation. Similar to the combustion processes described in Section 5.2.3, combustion byproducts will be formed when an emission vent stream is treated in a flare.

Flaring applications for control of VOC emissions from direct-fired dryers were not identified in the RBLC, however the principle of flare operation (i.e., control of VOC emissions through thermal destruction) is similar to thermal oxidation as discussed in Section 5.2.3. IDEM's regulations at 326 IAC 8-5-6(c)(2) provide for the use of an enclosed flare as a means to comply with the requirement for dry mill fuel grade ethanol production plants that meet the applicability provisions under 326 IAC 8-5-6(a) to control VOC emissions by no less than 98%. Flaring is therefore considered to be potentially applicable for MGPI's proposed direct-fired dryer.

5.3 Elimination of Technically Infeasible Options

The following technologies are considered to be technically infeasible, based on engineering evaluation or on chemical or physical principles, for application at MGPI. These technologies are therefore rejected as BACT for the control of VOC emissions from the proposed direct-fired dryer.

5.3.1 Carbon Adsorption

Carbon adsorption has not been demonstrated on an industrial scale for control of VOC from DDG drying operations. Due to the relatively low VOC concentration in the dryer exhaust stream and its relatively high moisture content, the potential would exist for condensation of water which could block effective carbon surface area. Dehumidification of the stream would be necessary, which would involve cooling the hot dryer exhaust vent. This additional process step is not considered to be technically feasible. Even if dehumidification were achieved, the potential effectiveness of activated carbon controls is severely limited due to the low concentration of VOC in the exhaust stream for control. Therefore, carbon adsorption controls are considered to be technically infeasible and are rejected as BACT for control of VOC from the proposed direct fired dryer.

5.3.2 Condensation

The DDG dryer exhaust characteristics make the control of VOC emissions with a refrigerated vent condenser inappropriate. An inordinately large amount of energy would be required to cool the relatively large volume exhaust air stream from its exit temperature of approximately 215°F to a temperature where ethanol (and the other VOC constituents in the vent stream) would condense in appreciable amounts, especially given their relatively low vapor concentrations that translate to very low dew points. Therefore, condenser controls are considered to be technically infeasible and are rejected as BACT for control of VOC from the proposed direct fired dryer.

5.4 Rank and Evaluate Remaining Technologies

The remaining technologies that are considered to be technically feasible for control of dryer VOC emissions are listed below, according to rank in order from most stringent to least stringent control based on information either in the RBLC, recent air permits, or as represented in studies.

Control Technology	Level of VOC Control
Thermal Oxidation	98% Reduction or 10 ppm _v outlet concentration
Wet Scrubbing	98% Reduction or 10 ppm _v outlet concentration
Flaring	98% Reduction or 10 ppm _v outlet concentration

Since each technology is capable of achieving an equivalent level of control (98% of VOC emissions), either thermal oxidation, wet scrubbing, or flaring could be considered the top-ranked control. According to USEPA Guidance (New Source Review Workshop Manual, Draft October 1990), "...an applicant proposing the top control alternative need not provide cost and other detailed information in regard to other control options. In such cases the applicant should document that the control option chosen is, indeed, the top, and review for collateral environmental impacts."

Of the three alternatives, thermal oxidation is by far the most commonly used control in practice for control of VOC emissions from DDG drying operations, as listed in the completed BACT-01 form and in Table 3. Other considerations with respect to environmental and energy impacts are listed below:

- Thermal oxidation and flaring, unlike wet scrubbing, do not result in the generation of another process stream (scrubber water) requiring subsequent treatment or disposal;
- Thermal oxidation provides similar control to flaring, but operates more efficiently, particularly in the case of an RTO where a substantial portion of the waste heat is recovered and used to pre-heat the incoming vent stream for treatment (typical thermal efficiencies in excess of 90%).
- Additional energy requirements (i.e., natural gas consumption) would be necessary to operate an RTO. In the case of MGPI, however, this impact is countered by the fact that under normal facility operation as proposed, the direct-fired dryer would operate in lieu of the facility's existing steam tube dryers. The increased natural gas use at the proposed dryer/controls would be balanced by a decrease in steam demand at the steam tube dryers. Natural gas consumption by the facility's existing boilers would therefore decrease. MGPI estimates that, under current operations with steam tube drying, approximately 1,120 Btu steam energy are required per pound of water evaporated. When the proposed direct-fired dryer and controls are in operation, this rate is expected to remain essentially the same for a given evaporative load.

- Thermal oxidation provides effective reduction of HAP emissions contained in the DDG dryer exhaust, representing the elimination of an adverse environmental impact that would result from its implementation.

Based on the reasons listed above, MGPI believes thermal oxidation to be the most advantageous of the top ranked technologies with respect to environmental and energy impacts.

5.5 Select BACT

MGPI proposes the following operational and emission limits as BACT for control of VOC emissions from the proposed direct-fired dryer:

- The VOC emissions from the proposed direct-fired DDG dryer shall be controlled by an RTO
- The RTO shall operate with an overall control efficiency, which includes capture and destruction efficiencies, of not less than 98% or resulting in a VOC outlet concentration of not more than 10 ppm_v. VOC emissions from the RTO stack shall remain less than or equal to 1.9 lb/hr, as measured during an initial performance test after operation of the unit commences.

MGPI has included a completed CE-06 application form in Appendix A describing the RTO proposed for installation. Included on this form are the associated testing, monitoring, and recordkeeping procedures that MGPI is proposing for the operation of the unit.

The completed BACT application forms in Appendix B support the analysis provided above. A completed BACT-01b form is not included; a detailed economic evaluation is not required as part of this application because MGPI is proposing the top control alternative.

Tables

Table 1
Summary of Potential to Emit
MGPI of Indiana, LLC

Potential to Emit Before Controls (ton/yr)									
Significant Emission Units	PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	GHG (tons/yr)	Total HAPs (tons/yr)
Project-affected emission sources									
Proposed direct-fired DDG dryer (Proposed EU-39)	418.8	418.8	418.8	18.8	27.9	418.8	464.3	27,155	39.4
DDG Cooler and Transport System (EU-32)	35.8	21.68	7.88	-	-	9.16	-	-	1.28
Wet Cake Production, Storage, and Loadout (Proposed EU-40)	-	-	-	-	-	0.05	-	-	0.0022
Steam Tube Dryers (EU-32) Serving as Back-up	193.6	193.6	193.6	-	-	860.5	-	-	67.4
Emission Units not affected (no change from prior permit representations)									
One (1) pneumatic conveyor, identified as EU-11	189.2	189.2	16.1	-	-	-	-	-	-
One (1) corn receiving and storage system, identified as EU-12 (Stack S-111)	225.3	225.3	19.1	-	-	-	-	-	-
One (1) grain transport system, identified as EU-12 (Stack S-112)	20.3	20.3	1.73	-	-	-	-	-	-
Seven (7) storage bins, collectively identified as EU- 13	20.3	20.3	1.73	-	-	-	-	-	-
Six (6) hammermills, collectively identified as EU-14	90.1	90.1	7.66	-	-	-	-	-	-
EU-21, which consists of fourteen (14) open fermenters	-	-	-	-	-	7.8	-	-	0.04
DDGS Storage (EU-34)	29.8	29.8	2.5	-	-	-	-	-	-
DDGS Rail/Truck Loadout (EU-35/EU-36)	27.2	27.2	2.3	-	-	-	-	-	-
DDGS Rail/Truck Loader(EU-37/EU-38)	0.27	0.27	0.05	-	-	-	-	-	-
Twenty-four (24) closed fermenters, collectively identified as EU-22	-	-	-	-	-	57.8	-	-	0.26
Two (2) beer wells, identified as EU-23 and EU-24	-	-	-	-	-	12.5	-	-	-
Distillation (EU-20 and EU-25 through EU-29)	-	-	-	-	-	0.1	-	-	3.43E-03
Four (4) paddle screens, identified as EU-31 and three (3) conveyors, identified as EU-33	-	-	-	-	-	440.0	-	-	2.00
One (1) wine room, identified as EU-41	-	-	-	-	-	19.5	-	-	-
One (1) tank farm, identified as EU-42	-	-	-	-	-	19.0	-	-	-
EU-43, which consists of Building 88	-	-	-	-	-	4.7	-	-	-
One (1) mini-tank farm, identified as EU-45	-	-	-	-	-	3.6	-	-	-
One (1) barrel and emptying operation, identified as EU-61	-	-	-	-	-	12.0	-	-	-
Six (6) warehouses, identified as EU-71 through EU-76	-	-	-	-	-	1867.4	-	-	-
One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.4	5.76	88.0	126,479	1.98
One (1) steam boiler, identified as EU-97 (worst case fuel)	2.85	3.28	2.21	60.8	28.5	1.12	17.2	31,926	0.39
One (1) loading rack, identified as EU-46	-	-	-	-	-	6.69	-	-	0.05
Subtotal Significant Emission Unit	1255	1248	682	80.2	350	3747	569	185,560	112.7
Fugitive Emissions	-	-	-	-	-	128.2	-	-	0.90
Emergency Generator-Diesel	0.280	0.160	0.160	1.62	9.60	0.28	2.20	462	4.41E-03
Emergency Generator-Natural gas	0.001	0.001	0.001	1.78E-05	0.10	0.004	0.01	4.29	2.38E-03
FW Pump-Diesel	0.13	0.13	0.13	0.12	1.82	0.15	0.39	67.8	1.59E-03
Subtotal Insignificant Activities	0.41	0.29	0.29	1.74	11.5	0.43	2.60	534	8.38E-03
Total	1256	1248	682	82.0	361	3,875	572	186,094	113.6

Table 1
Summary of Potential to Emit
MGPI of Indiana, LLC

Potential to Emit After Controls (ton/yr)									
Significant Emission Units	PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	GHG (tons/yr)	Total HAPs (tons/yr)
Project-affected emission sources									
Proposed direct-fired DDG dryer (Proposed EU-39)	8.38	8.38	8.38	18.8	27.9	8.38	46.4	27,155	1.18
DDG Cooler and Transport System (EU-32)	7.91	5.01	2.01	-	-	9.16	-	-	1.28
Wet Cake Production, Storage, and Loadout (Proposed EU-40)	-	-	-	-	-	0.05	-	-	0.0022
Steam Tube Dryers (EU-32) Serving as Back-up	29.0	29.0	29.0	-	-	860.5	-	-	67.4
Emission Units not affected (no change from prior permit representations)									
One (1) pneumatic conveyor, identified as EU-11	1.89	1.89	0.32	-	-	-	-	-	-
One (1) corn receiving and storage system, identified as EU-12 (Stack S-111)	2.25	2.25	0.38	-	-	-	-	-	-
One (1) grain transport system, identified as EU-12 (Stack S-112)	0.20	0.20	0.03	-	-	-	-	-	-
Seven (7) storage bins, collectively identified as EU- 13	0.20	0.20	0.03	-	-	-	-	-	-
Six (6) hammermills, collectively identified as EU-14	0.90	0.90	0.15	-	-	-	-	-	-
EU-21, which consists of fourteen (14) open fermenters	-	-	-	-	-	7.8	-	-	0.04
DDGS Storage (EU-34)	0.30	0.30	0.05	-	-	-	-	-	-
DDGS Rail/Truck Loadout (EU-35/EU-36)	0.27	0.27	0.05	-	-	-	-	-	-
DDGS Rail/Truck Loader(EU-37/EU-38)	0.27	0.27	0.05	-	-	-	-	-	-
Twenty-four (24) closed fermenters, collectively identified as EU-22	-	-	-	-	-	57.8	-	-	0.26
Two (2) beer wells, identified as EU-23 and EU-24	-	-	-	-	-	12.5	-	-	-
Distillation (EU-20 and EU-25 through EU-29)	-	-	-	-	-	0.1	-	-	3.43E-03
Four (4) paddle screens, identified as EU-31 and three (3) conveyors, identified as EU-33	-	-	-	-	-	440.0	-	-	2.00
One (1) wine room, identified as EU-41	-	-	-	-	-	19.5	-	-	-
One (1) tank farm, identified as EU-42	-	-	-	-	-	19.0	-	-	-
EU-43, which consists of Building 88	-	-	-	-	-	4.69	-	-	-
One (1) mini-tank farm, identified as EU-45	-	-	-	-	-	3.59	-	-	-
One (1) barrel and emptying operation, identified as EU-61	-	-	-	-	-	12.0	-	-	-
Six (6) warehouses, identified as EU-71 through EU-76	-	-	-	-	-	1867	-	-	-
One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.4	5.76	88.0	126,479	1.98
One (1) steam boiler, identified as EU-97 (worst case fuel)	2.85	3.28	2.21	60.8	28.53	1.12	17.2	31,926	0.39
One (1) loading rack, identified as EU-46	-	-	-	-	-	6.69	-	-	0.05
Subtotal Significant Emission Unit	56	60	51	80	350	3,336	152	185,560	74.55
Fugitive Emissions	-	-	-	-	-	128.2	-	-	0.90
Emergency Generator-Diesel	0.28	0.16	0.16	1.62	9.60	0.28	2.20	462	4.41E-03
Emergency Generator-Natural gas	0.001	0.001	0.001	0.00002	0.096	0.004	0.012	4.29	2.38E-03
FW Pump-Diesel	0.13	0.13	0.13	0.12	1.82	0.15	0.39	67.8	1.59E-03
Subtotal Insignificant Activities	0.41	0.29	0.29	1.74	11.52	0.43	2.60	534	8.38E-03
Total	56.9	60.3	51.0	82.0	361	3,465	154	186,094	75.46

Table 1
Summary of Potential to Emit
MGPI of Indiana, LLC

Potential to Emit After Issuance of Permit (Limited PTE) (ton/yr)									
Significant Emission Units	PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	GHG (tons/yr)	Total HAPs (tons/yr)
Project-affected emission sources									
Proposed direct-fired DDG dryer (Proposed EU-39)	8.38	8.38	8.38	18.8	27.9	8.38	46.4	27,155	1.18
DDG Cooler and Transport System (EU-32)	7.91	5.01	2.01	-	-	9.16	-	-	1.28
Wet Cake Production, Storage, and Loadout (Proposed EU-40)	-	-	-	-	-	0.05	-	-	0.0022
Steam Tube Dryers (EU-32) Serving as Back-up	19.8	19.8	19.8	-	-	587.9	-	-	46.0
Emission Units not affected (no change from prior permit representations)									
One (1) pneumatic conveyor, identified as EU-11	189.2	189.2	16.1	-	-	-	-	-	-
One (1) corn receiving and storage system, identified as EU-12 (Stack S-111)	5.26	5.26	5.26	-	-	-	-	-	-
One (1) grain transport system, identified as EU-12 (Stack S-112)	0.96	0.96	0.96	-	-	-	-	-	-
Seven (7) storage bins, collectively identified as EU- 13	0.20	0.20	0.03	-	-	-	-	-	-
Six (6) hammermills, collectively identified as EU-14	90.1	90.1	7.66	-	-	-	-	-	-
EU-21, which consists of fourteen (14) open fermenters	-	-	-	-	-	7.8	-	-	0.04
DDGS Storage (EU-34)	0.60	0.60	0.60	-	-	-	-	-	-
DDGS Rail/Truck Loadout (EU-35/EU-36)	1.27	1.27	1.27	-	-	-	-	-	-
DDGS Rail/Truck Loader(EU-37/EU-38)	5.48	5.48	5.48	-	-	-	-	-	-
Twenty-four (24) closed fermenters, collectively identified as EU-22	-	-	-	-	-	57.8	-	-	0.26
Two (2) beer wells, identified as EU-23 and EU-24	-	-	-	-	-	12.5	-	-	-
Distillation (EU-20 and EU-25 through EU-29)	-	-	-	-	-	0.1	-	-	0.00
Four (4) paddle screens, identified as EU-31 and three (3) conveyors, identified as EU-33	-	-	-	-	-	440.0	-	-	2.00
One (1) wine room, identified as EU-41	-	-	-	-	-	19.5	-	-	-
One (1) tank farm, identified as EU-42	-	-	-	-	-	19.0	-	-	-
EU-43, which consists of Building 88	-	-	-	-	-	4.69	-	-	-
One (1) mini-tank farm, identified as EU-45	-	-	-	-	-	3.59	-	-	-
One (1) barrel and emptying operation, identified as EU-61	-	-	-	-	-	12.0	-	-	-
Six (6) warehouses, identified as EU-71 through EU-76	-	-	-	-	-	1,867	-	-	-
One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.4	5.76	88.0	126,479	1.98
One (1) steam boiler, identified as EU-97 (worst case fuel)	1.98	2.65	1.96	39.4	25.4	0.56	10.42	31,926	0.39
One (1) loading rack, identified as EU-46	-	-	-	-	-	6.69	-	-	0.05
Subtotal Significant Emission Unit	333	337	77.5	58.9	347	3,063	145	185,560	53.21
Fugitive Emissions	-	-	-	-	-	128.2	-	-	0.90
Emergency Generator-Diesel	0.28	0.16	0.16	1.62	9.60	0.28	2.20	462	4.41E-03
Emergency Generator-Natural gas	0.001	0.001	0.001	0.000	0.096	0.004	0.012	4.29	2.38E-03
FW Pump-Diesel	0.13	0.13	0.13	0.12	1.82	0.15	0.39	67.8	1.59E-03
Subtotal Insignificant Activities	0.41	0.29	0.29	1.74	11.52	0.43	2.60	534	8.38E-03
Total	334	337	77.8	60.6	358	3,192	147	186,094	54.11

Table 2
 PSD/NNSR Applicability Analysis
 Proposed DDG Dryer Project
 MGPI of Indiana, LLC

Pollutant	Project Related Emission Increase (tpy)	PSD/NNSR Significance Threshold (tpy)	Netting Analysis Required? (Yes/No)	Net Emissions Increase/Decrease (tpy)	Major Modification? (Yes/ No)
PM	16.29	25	No	N/A	No
PM10	13.38	15	No	N/A	No
PM2.5	10.39	10	Yes	9.19	No
SO2	18.84	40	No	N/A	No
CO	46.43	100	No	N/A	No
NOx	27.86	40	No	N/A	No
VOC	17.58	40	No	N/A	No

Notes:

See Appendix D for constituent-specific tables presenting PSD/NNSR applicability analysis.

Table 3
Summary of Indiana Fuel Ethanol Plant Dryer VOC Controls
MGPI of Indiana, LLC

No.	Facility*	Permit ID	City, State, Zip	Subject to 326 IAC 8-5-6	Method of Compliance	VOC Control Efficiency Required
1	Valero Renewable Fuels Company, LLC (dba Valero Linden)	107-29252	Linden, IN 47955	Yes	TO/HRSG	98%
2	POET Biorefining- Cloverdale, LLC	133-34343	Cloverdale, IN 46120	Yes	2 RTOs	98%
3	Green Plains Bluffton, LLC	179-34356	Bluffton, IN 46714	Yes	2 RTOs	98%
4	The Andersons Clymers Ethanol, LLC	017-30272	Logansport, IN 46947	Yes	2 RTO/HRSG Systems	98%
5	POET Biorefining - Portland	075-30802	Portland, IN 47371	Yes	RTO	98%
6	POET Biorefining- Alexandria, LLC	095-30443	Alexandria, IN 46001	Yes	RTO	98%
7	POET Biorefining North Manchester	169-27641	North Manchester, IN 46962	Yes	2 RTOs	98%
8	Cardinal Ethanol, LLC	135-27068	Union City, IN 47390	Yes	2 TO/HRSG Systems	98%
9	Indiana Biofuels, Inc.	145-24857	Shelbyville, IN 46176	Yes	1 TO per Dryer	98%
10	Noble Americas South Bend Ethanol LLC	141-34359	South Bend, IN 46613	Yes	1 RTO per Dryer	98%

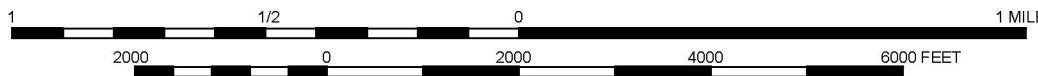
Notes:

- * - The above facilities each have a 2869 SIC code (Chemicals and Allied Products) and a thermal oxidizer for control of VOC emissions from the DDG dryers
- HRSG - Heat Recovery Steam Generator
- IAC - Indiana Administrative Code
- RTO - Regenerative Thermal Oxidizer

Figures

ENVIRON

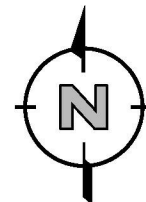
L:\Loop Project Files\00_CAD FILES\34MGP_Dryer Permit-Lawrenceburg, IN 3434439A\01_Site Location Map.dwg



CONTOUR INTERVAL 10 FEET

SOURCE: U.S.G.S. 7.5 minute series (topographic)
Lawrenceburg, Indiana Quadrangle, 2013;
Aurora, Indiana-Kentucky Quadrangle, 2013.

LEGEND	
	APPROXIMATE SITE LOCATION



DRAFTED BY: CKL

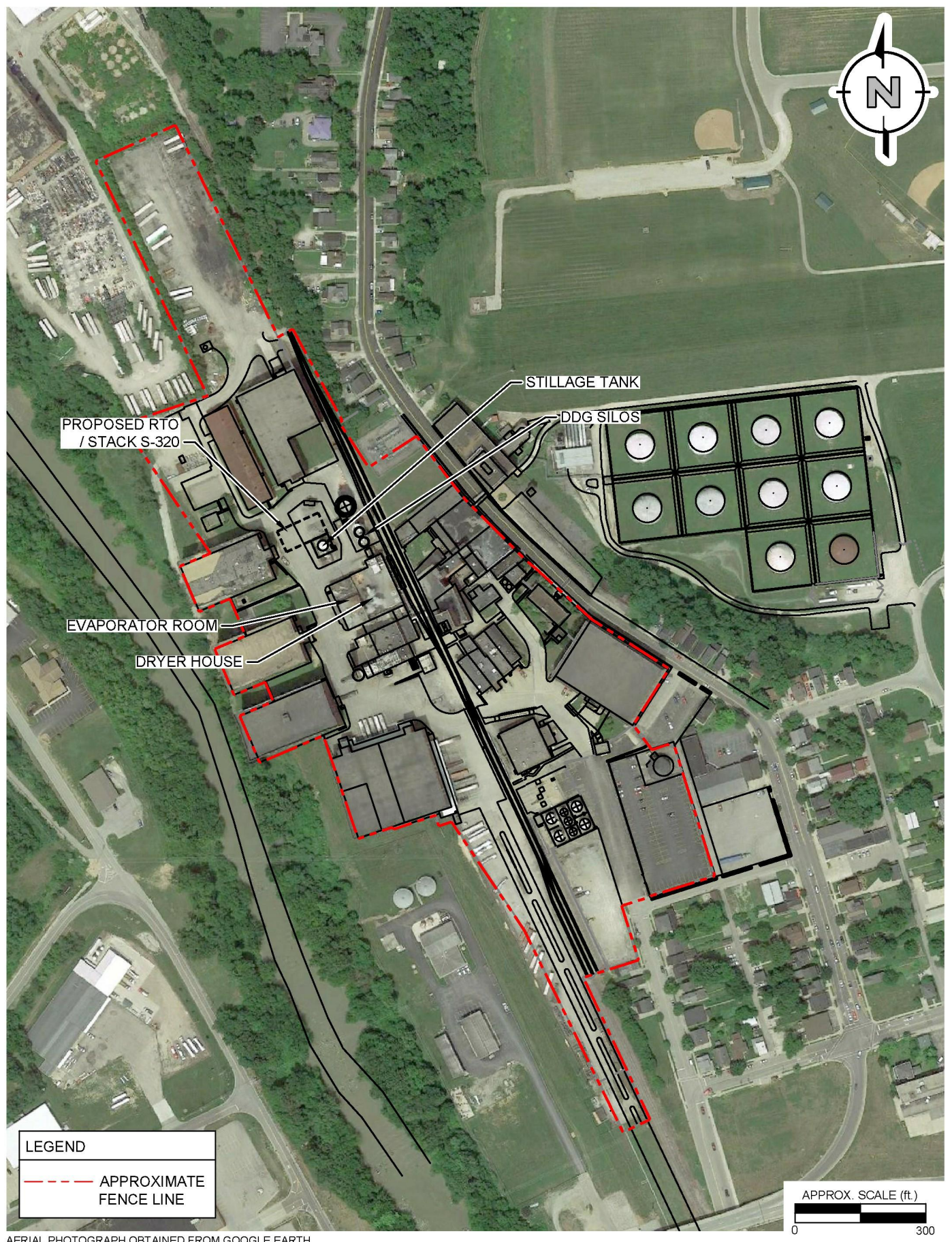
DATE: 11/7/14

SITE LOCATION MAP
MGPI OF INDIANA, LLC
7 RIDGE AVENUE
LAWRENCEBURG, INDIANA

FIGURE
1

3434439A

L:\Loop Project Files\00_CAD FILES\34MGP_Dryer Permit-Lawrenceburg, IN 3434439A\02_Site Layout.dwg



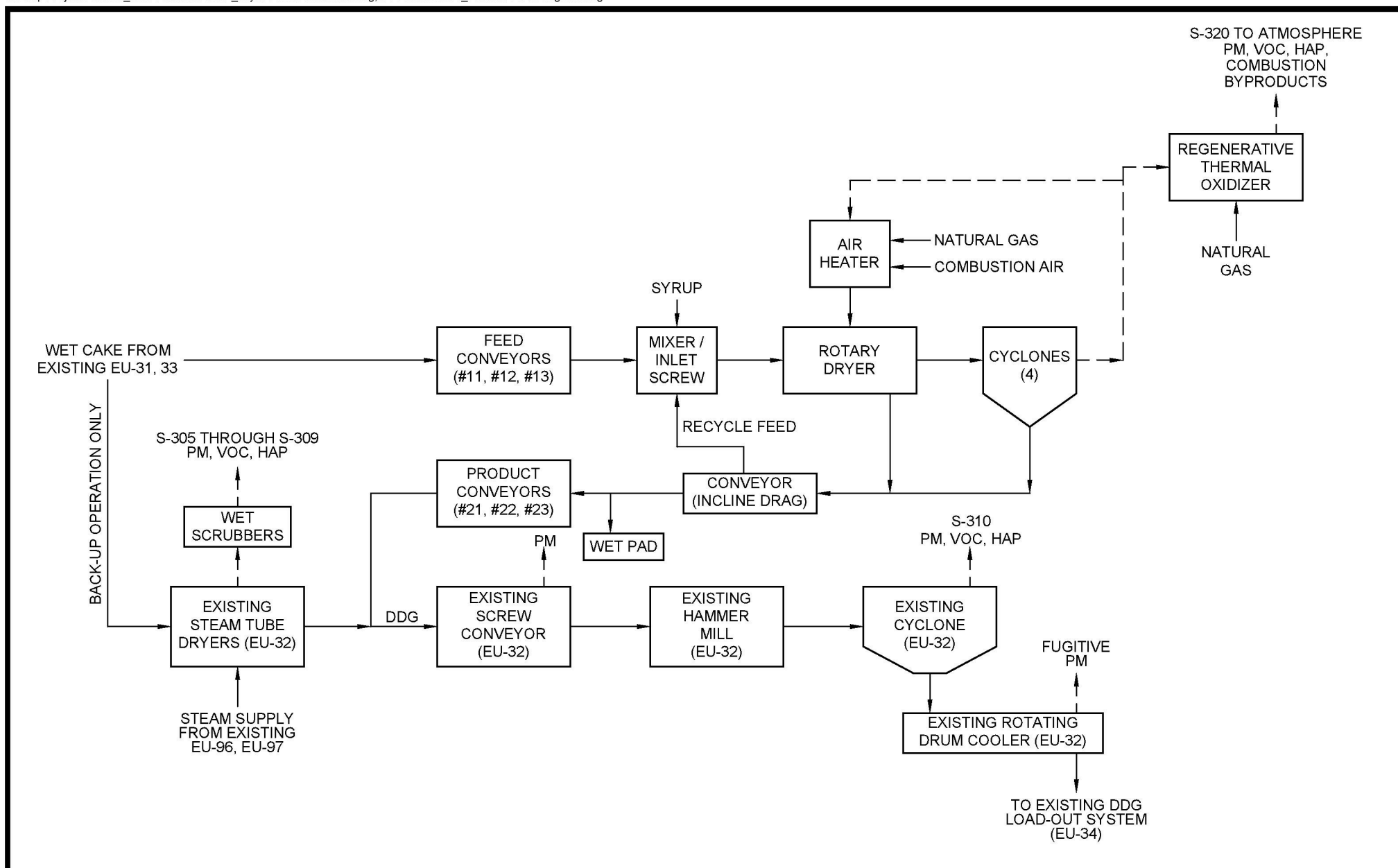
DRAFTED BY: CKL

DATE: 12/9/14

SITE LAYOUT
MGPI OF INDIANA, LLC
7 RIDGE AVENUE
LAWRENCEBURG, INDIANA

FIGURE
2

3434439A



DRAFTED BY: CKL

DATE: 12/16/14

PROCESS FLOW DIAGRAM

MGPI OF INDIANA, LLC
7 RIDGE AVENUE
LAWRENCEBURG, INDIANA

FIGURE

3

3434439A

Appendix A

IDEM Permit Application Forms



AIR PERMIT APPLICATION COVER SHEET
State Form 50639 (R4 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this cover sheet is to obtain the core information needed to process the air permit application. This cover sheet is required for all air permit applications submitted to IDEM, OAQ. Place this cover sheet on top of all subsequent forms and attachments that encompass your air permit application packet.
- Submit the completed air permit application packet, including all forms and attachments, to **IDEM Air Permits Administration** using the address in the upper right hand corner of this page.
- IDEM will send a bill to collect the filing fee and any other applicable fees.
- Detailed instructions for this form are available on the Air Permit Application Forms website.

FOR OFFICE USE ONLY

PERMIT NUMBER:

DATE APPLICATION WAS RECEIVED:

1. Tax ID Number: 26-2330535

PART A: Purpose of Application

Part A identifies the purpose of this air permit application. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

2. Source / Company Name: MGPI of Indiana, LLC		3. Plant ID: 029 — 00005
4. Billing Address: 7 Ridge Avenue		
City: Lawrenceburg	State: IN	ZIP Code: 47025 –
5. Permit Level: <input type="checkbox"/> Exemption <input type="checkbox"/> Registration <input type="checkbox"/> SSOA <input type="checkbox"/> MSOP <input type="checkbox"/> FESOP <input checked="" type="checkbox"/> TVOP <input type="checkbox"/> PBR		
6. Application Summary: Check all that apply. Multiple permit numbers may be assigned as needed based on the choices selected below.		
<input type="checkbox"/> Initial Permit <input type="checkbox"/> Renewal of Operating Permit <input type="checkbox"/> Asphalt General Permit		
<input type="checkbox"/> Review Request <input type="checkbox"/> Revocation of Operating Permit <input type="checkbox"/> Alternate Emission Factor Request		
<input type="checkbox"/> Interim Approval <input type="checkbox"/> Relocation of Portable Source <input type="checkbox"/> Acid Deposition (Phase II)		
<input type="checkbox"/> Site Closure <input type="checkbox"/> Emission Reduction Credit Registry		
<input type="checkbox"/> Transition (between permit levels) <i>From:</i> <i>To:</i>		
<input type="checkbox"/> Administrative Amendment: <input type="checkbox"/> Company Name Change <input type="checkbox"/> Change of Responsible Official		
<input type="checkbox"/> Correction to Non-Technical Information <input type="checkbox"/> Notice Only Change		
<input type="checkbox"/> Other (specify):		
<input checked="" type="checkbox"/> Modification: <input checked="" type="checkbox"/> New Emission Unit or Control Device <input checked="" type="checkbox"/> Modified Emission Unit or Control Device		
<input type="checkbox"/> New Applicable Permit Requirement <input type="checkbox"/> Change to Applicability of a Permit Requirement		
<input type="checkbox"/> Prevention of Significant Deterioration <input type="checkbox"/> Emission Offset <input type="checkbox"/> MACT Preconstruction Review		
<input type="checkbox"/> Minor Source Modification <input checked="" type="checkbox"/> Significant Source Modification		
<input type="checkbox"/> Minor Permit Modification <input checked="" type="checkbox"/> Significant Permit Modification		
<input type="checkbox"/> Other (specify):		
7. Is this an application for an initial construction and/or operating permit for a "Greenfield" Source?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
8. Is this an application for construction of a new emissions unit at an Existing Source?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

PART B: Pre-Application Meeting

Part B specifies whether a meeting was held or is being requested to discuss the permit application.

9. Was a meeting held between the company and IDEM prior to submitting this application to discuss the details of the project?

☐ No ☒ Yes: Date: 12/11/2014

10. Would you like to schedule a meeting with IDEM management and your permit writer to discuss the details of this project?

☒ No ☐ Yes: Proposed Date for Meeting:

PART C: Confidential Business Information

Part C identifies permit applications that require special care to ensure that confidential business information is kept separate from the public file.

Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in the Indiana Administrative Code (IAC). To ensure that your information remains confidential, refer to the IDEM, OAQ information regarding submittal of confidential business information. For more information on confidentiality for certain types of business information, please review IDEM's Nonrule Policy Document Air-031-NPD regarding Emission Data.

11. Is any of the information contained within this application being claimed as **Confidential Business Information**?

☒ No ☐ Yes

PART D: Certification Of Truth, Accuracy, and Completeness

Part D is the official certification that the information contained within the air permit application packet is truthful, accurate, and complete. Any air permit application packet that we receive without a signed certification will be deemed incomplete and may result in denial of the permit.

For a Part 70 Operating Permit (TVOP) or a Source Specific Operating Agreement (SSOA), a "responsible official" as defined in 326 IAC 2-7-1(34) must certify the air permit application. For all other applicants, this person is an "authorized Individual" as defined in 326 IAC 2-1.1-1(1).

☒ I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.

Mike Templin
Name (typed)

Plant Manager
Title

Signature

Date



OAQ AIR PERMIT APPLICATION – FORMS CHECKLIST

State Form 51607 (R5 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
 100 N. Senate Avenue, MC 61-53 Room 1003
 Indianapolis, IN 46204-2251
 Telephone: (317) 233-0178 or
 Toll Free: 1-800-451-6027 x30178 (within Indiana)
 Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this checklist is to help the applicant and IDEM, OAQ ensure that the air permit application packet is administratively complete. This checklist is a required form.
- Check the appropriate box indicating whether each application form is applicable for the current permit application. The source must submit only those forms pertinent to the current permit application.
- Place this checklist between the cover sheet and all subsequent forms and attachments that encompass your air permit application packet.

Part A: General Source Data				
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	COVER	Application Cover Sheet	50639	Include for every application, modification, and renewal, including source specific operating agreements (SSOA).
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	CHECKLIST	Forms Checklist	51607	Include for every application, modification, and renewal, including SSOA.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	GSD-01	Basic Source Level Information	50640	Include for every application, modification, and renewal, including SSOA.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	GSD-02	Plant Layout Diagram	51605	Include for every new source application, and modification.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	GSD-03	Process Flow Diagram	51599	Include one for every process covered by the application.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	GSD-04	Stack / Vent Information	51606	Include for every new source application, and modification.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	GSD-05	Emissions Unit Information	51610	Include for every process covered by the application.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	GSD-06	Particulate Emissions Summary	51612	Include if the process has particulate emissions (PM).
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	GSD-07	Criteria Pollutant Emissions Summary	51602	Include if the process has criteria pollutant emissions.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	GSD-08	HAP Emissions Summary	51604	Include if the process has hazardous air pollutant emissions (HAP).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	GSD-09	Summary of Additional Information	51611	Include if the additional information is included.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	GSD-10	Insignificant Activities	51596	Include if there are unpermitted insignificant activities.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	GSD-11	Alternative Operating Scenario	51601	Include if an AOS is requested.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	GSD-12	Affidavit of Nonapplicability	51600	Include if the standard notification requirements do not apply.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	GSD-13	Affidavit of Applicability	51603	Include if the standard notification requirements apply.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	GSD-14	Owners and Occupants Notified	51609	Include if the standard notification requirements apply.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	GSD-15	Government Officials Notified	51608	Include if the standard notification requirements apply.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	RENEWAL	Renewal Checklist	51755	Include with every operating permit renewal packet.

Continued on Next Page

Page 1 of 6

Part B: Process Information				
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	AEF-01	Alternate Emission Factor Request	51860	Submit if you are requesting to use an emission factor other than AP-42.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	PI-01	Miscellaneous Processes	52534	Include one form for each process for which there is not a specific PI form.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-02A	Combustion Unit Summary	52535	Include one form to summarize all combustion units (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-02B	<i>Combustion:</i> Boilers, Process Heaters, & Furnaces	52536	Include one form for each boiler, process heater, or furnace (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-02C	<i>Combustion:</i> Turbines & Internal Combustion Engines	52537	Include one form for each turbine or internal combustion engine (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-02D	<i>Combustion:</i> Incinerators & Combustors	52538	Include one form for each incinerator or combustor (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-02E	<i>Combustion:</i> Kilns	52539	Include one form for each kiln (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-02F	<i>Combustion:</i> Fuel Use	52540	Include one form for each combustion unit (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-02G	<i>Combustion:</i> Emission Factors	52541	Include one form for each combustion unit (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-02H	<i>Combustion:</i> Federal Rule Applicability	52542	Include one form for each combustion unit (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-03	Storage and Handling of Bulk Material	52543	Include if the process involves the storage and handling of bulk materials.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-04	Asphalt Plants	52544	Include for each asphalt plant process (<i>unless general permit</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-05	Brick / Clay Products	52545	Include for each brick and/or clay products process.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-06	Electroplating Operations	52546	Include for each electroplating process.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-07	Welding Operations	52547	Include for each welding process.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-08	Concrete Batchers	52548	Include for each concrete batcher (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-09	Degreasing	52549	Include for each degreasing process (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-10	Dry Cleaners	52550	Include for each dry cleaning process
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-11	Foundry Operations	52551	Include for each foundry process
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-12	Grain Elevators	52552	Include for each grain elevator (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-13	Lime Manufacturing	52553	Include for each lime manufacturing process.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-14	Liquid Organic Compound Storage	52554 (doc)	Include if the process involves the storage of liquid organic compounds.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-14ALT	Alternate version of Liquid Organic Compound Storage	52555 (xls)	Include if the process involves the storage of liquid organic compounds and there are several storage vessels.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-15	Portland Cement Manufacturing	52556	Include for each Portland cement manufacturing process.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-16	Reinforced Plastics & Composites	52557	Include for each reinforced plastics and composites process.

Continued on Next Page

Part B: Process Information				
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-17	Blasting Operations	52558	Include for each blasting process (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-18	Mineral Processing	52559	Include if the process involves mineral processing (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-19	Surface Coating & Printing Operations	52560	Include for each surface coating or printing process (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-20	Woodworking / Plastic Machining	52561	Include for each woodworking or plastic machining process (<i>unless SSOA</i>).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-21	Site Remediation	52570	Include for each soil remediation process.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PI-22	Ethanol Plants (<i>Under Development</i>)	None	Include for each ethanol plant.

Part C: Control Equipment				
Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	CE-01	Control Equipment Summary	51904	Include if add-on control equipment will be used for the process.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	CE-02	Particulates – Baghouse / Fabric Filter	51953	Include for each baghouse or fabric filter.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	CE-03	Particulates – Cyclone	52620	Include for each cyclone.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	CE-04	Particulates – Electrostatic Precipitator	52621	Include for each electrostatic precipitator.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	CE-05	Particulates – Wet Collector / Scrubber / Absorber	52622	Include for each wet collector, scrubber, or absorber.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	CE-06	Organics – Flare / Oxidizer / Incinerator	52623	Include for each flare, oxidizer, or incinerator.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	CE-07	Organics – Adsorbers	52624	Include for each adsorber.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	CE-08	Organics – Condenser	52625	Include for each condenser.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	CE-09	Reduction Technology	52626	Include for each control device using reduction technology (e.g., SCR, SNCR).
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	CE-10	Miscellaneous Control Equipment	52436	Include one form for equipment for which there is not a specific CE form.

Continued on Next Page

Part D: Compliance Determination for Part 70 Sources

Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	CD-01	Emissions Unit Compliance Status	51861	Include for every Title V application, including modifications.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	CD-02	Compliance Plan by Applicable Requirement	51862	Include for every Title V application, including modifications.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	CD-03	Compliance Plan by Emissions Unit	51863	Include for every Title V application, including modifications.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	CD-04	Compliance Schedule and Certification	51864	Include for every Title V application, including modifications and renewal.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	FED-03	Compliance Assurance Monitoring	53377	Include for every Title V application, including modifications.

Part E: Best Available Control Technology

Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	BACT-01	Analysis of Best Available Control Technology	None	Include for every BACT application.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	BACT-01a	Background Search: Existing BACT Determinations	None	Include for every BACT application.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	BACT-01b	Cost/Economic Impact Analysis	None	Include for every BACT application.
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	BACT-02	Summary of Best Available Control Technology	None	Include for every BACT application.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PSD / EO-01	PSD / Emission Offset Checklist	None	Include for every PSD application and every NSR application that requires emission offsets.

Part F: Emission Credit Registry

Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	EC-01	Generation of Emission Credits	51783	Include if the modification results in emission reductions.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	EC-02	Transfer of Emission Credits	51784	Submit whenever registered emission credits are transferred.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	EC-03	Use of Emission Credits	51785	Include if the modification requires the use of emission credits for offsets.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	EC-04	Emission Credit Request	51906	Submit if you are looking for emission credits for offsets.

Continued on Next Page

Part G: Plantwide Applicability Limits

Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PAL-01	Actuals Plantwide Applicability Limit	52451	Include if the modification results in emission reductions.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PAL-02	Revised Plantwide Applicability Limit	52452	Submit whenever registered emission credits are transferred.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PAL-03	Plantwide Applicability Limit Renewal	52453	Include if the modification requires the use of emission credits for offsets.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	PAL-04	Request for Termination of Plantwide Applicability Limit	52454	Submit if you are looking for emission credits for offsets.

Part H: Air Toxics

Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	FED-01	Summary of Federal Requirements – NSPS & NESHAP	53512	Include for each 40 CFR Part 60 NSPS, 40 CFR Part 61 NESHAP, and 40 CFR Part 63 NESHAP applicable to the process.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	FED-02	MACT Pre-Construction Review	51905	Include if constructing or modifying a process subject to a Part 63 NESHAP.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	No Form ID	MACT Initial Notification	None	This form is available on the U.S. EPA website. Completed notifications should be submitted to the IDEM Compliance Branch.

Part I: Special Permits

Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	INTERIM	Interim Approval	None	Submit if you are applying for interim operating approval.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	ASPHALT	Asphalt General Permit	None	Submit if you are applying for or modifying an asphalt plant general permit.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	NOXBTP	NO _x Budget Permit	None	Submit if you are a power plant or if you have opted in to the NO _x budget trading program.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	ACIDRAIN	Phase 2 Acid Rain Permit	None	Submit if you are applying for, modifying, or renewing a Phase 2 Acid Rain permit.

Continued on Next Page

Part J: Source Specific Operating Agreements (SSOA)

Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-01	Summary of Application and Existing Agreements	53438	Submit if you are applying for or modifying a Source Specific Operating Agreement.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-02	Industrial / Commercial Surface Coating Operations -OR- Graphic Arts Operations (326 IAC 2-9-2.5)	53439	Submit if you are applying for or modifying a SSOA for industrial or commercial surface coating operations not subject to 326 IAC 8-2; or graphic arts operations not subject to 326 IAC 8-5-5.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-03	Surface Coating or Graphic Arts Operations (326 IAC 2-9-3)	53440	Submit if you are applying for or modifying a SSOA for surface coating or graphic arts operations.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-04	Woodworking Operations (326 IAC 2-9-4)	53441	Submit if you are applying for or modifying a SSOA for woodworking operations.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-05	Abrasive Cleaning Operations (326 IAC 2-9-5)	53442	Submit if you are applying for or modifying a SSOA for abrasive cleaning operations.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-06	Grain Elevators (326 IAC 2-9-6)	53443	Submit if you are applying for or modifying a SSOA for grain elevators.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-07	Sand And Gravel Plants (326 IAC 2-9-7)	53444	Submit if you are applying for or modifying a SSOA for sand and gravel plants.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-08	Crushed Stone Processing Plants (326 IAC 2-9-8)	53445	Submit if you are applying for or modifying a SSOA for crushed stone processing plants.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-09	Ready-Mix Concrete Batch Plants (326 IAC 2-9-9)	53446	Submit if you are applying for or modifying a SSOA for ready-mix concrete batch plants.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-10	Coal Mines And Coal Preparation Plants (326 IAC 2-9-10)	53447	Submit if you are applying for or modifying a SSOA for coal mines and coal preparation plants.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-11	Automobile Refinishing Operations (326 IAC 2-9-11)	53448	Submit if you are applying for or modifying a SSOA for automobile refinishing operations.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-12	Degreasing Operations (326 IAC 2-9-12)	53449	Submit if you are applying for or modifying a SSOA for degreasing operations.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-13	External Combustion Sources (326 IAC 2-9-13)	53450	Submit if you are applying for or modifying a SSOA for external combustion sources.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	OA-14	Internal Combustion Sources (326 IAC 2-9-14)	53451	Submit if you are applying for or modifying a SSOA for internal combustion sources.



OAQ GENERAL SOURCE DATA APPLICATION
GSD-01: Basic Source Level Information

State Form 50640 (R5 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch

100 N. Senate Avenue, MC 61-53 Room 1003

Indianapolis, IN 46204-2251

Telephone: (317) 233-0178 or

Toll Free: 1-800-451-6027 x30178 (within Indiana)

Facsimile Number: (317) 232-6749

www.IN.gov/idem

NOTES:

- The purpose of GSD-01 is to provide essential information about the entire source of air pollutant emissions. GSD-01 is a required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

PART A: Source / Company Location Information

1. Source / Company Name: MGPI of Indiana, LLC		2. Plant ID: 029 – 00005	
3. Location Address: 7 Ridge Avenue			
City: Lawrenceburg		State: IN	ZIP Code: 47025 –
4. County Name: Dearborn		5. Township Name: Lawrenceburg	
6. Geographic Coordinates:			
Latitude: 39 deg 06' 01"		Longitude: 84 deg 51' 51"	
7. Universal Transferal Mercadum Coordinates (if known):			
Zone: 16	Horizontal: 684693	Vertical: 4330076	
8. Adjacent States: Is the source located within 50 miles of an adjacent state?			
<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – <i>Indicate Adjacent State(s):</i> <input type="checkbox"/> Illinois (IL) <input type="checkbox"/> Michigan (MI) <input checked="" type="checkbox"/> Ohio (OH) <input checked="" type="checkbox"/> Kentucky (KY)			
9. Attainment Area Designation: Is the source located within a non-attainment area for any of the criteria air pollutants?			
<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – <i>Indicate Nonattainment Pollutant(s):</i> <input type="checkbox"/> CO <input type="checkbox"/> Pb <input type="checkbox"/> NO _x <input checked="" type="checkbox"/> O ₃ <input type="checkbox"/> PM <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂			
10. Portable / Stationary: Is this a portable or stationary source? <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Stationary			

PART B: Source Summary

11. Company Internet Address (optional):	
12. Company Name History: Has this source operated under any other name(s)?	
<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – <i>Provide information regarding past company names in Part I, Company Name History.</i>	
13. Portable Source Location History: Will the location of the portable source be changing in the near future?	
<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> No <input type="checkbox"/> Yes – <i>Complete Part J, Portable Source Location History, and Part K, Request to Change Location of Portable Source.</i>	
14. Existing Approvals: Have any exemptions, registrations, or permits been issued to this source?	
<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – <i>List these permits and their corresponding emissions units in Part M, Existing Approvals.</i>	
15. Unpermitted Emissions Units: Does this source have any unpermitted emissions units?	
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes – <i>List all unpermitted emissions units in Part N, Unpermitted Emissions Units.</i>	
16. New Source Review: Is this source proposing to construct or modify any emissions units?	
<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – <i>List all proposed new construction in Part O, New or Modified Emissions Units.</i>	
17. Risk Management Plan: Has this source submitted a Risk Management Plan?	
<input checked="" type="checkbox"/> Not Required <input type="checkbox"/> No <input type="checkbox"/> Yes → Date submitted: EPA Facility Identifier: – –	

PART C: Source Contact Information

IDEM will send the original, signed permit decision to the person identified in this section.
This person **MUST** be an employee of the permitted source.

18. Name of Source Contact Person: William R. Graves

19. Title (optional): EHS Manager

20. Mailing Address: 7 Ridge Avenue

City: Lawrenceburg

State: IN

ZIP Code: 47025 –

21. Electronic Mail Address (optional): randy.graves@mgpingredients.com

22. Telephone Number: (812) 532 – 4158

23. Facsimile Number (optional): (812) 532 – 4216

PART D: Authorized Individual/Responsible Official Information

IDEM will send a copy of the permit decision to the person indicated in this section, if the Authorized Individual or Responsible Official is different from the Source Contact specified in Part C.

24. Name of Authorized Individual or Responsible Official: Mike Templin

25. Title: Plant Manager

26. Mailing Address: 7 Ridge Avenue

City: Lawrenceburg

State: IN

ZIP Code: 47025 –

27. Telephone Number: (812) 532 – 4172

28. Facsimile Number (optional): () –

29. Request to Change the Authorized Individual or Responsible Official: Is the source officially requesting to change the person designated as the Authorized Individual or Responsible Official in the official documents issued by IDEM, OAQ? *The permit may list the title of the Authorized Individual or Responsible Official in lieu of a specific name.*

☒ No ☐ Yes – **Change Responsible Official to:**

PART E: Owner Information

30. Company Name of Owner: MGPI of Indiana, LLC

31. Name of Owner Contact Person: William R. Graves

32. Mailing Address: 7 Ridge Avenue

City: Lawrenceburg

State: IN

ZIP Code: 47025 –

33. Telephone Number: (812) 532 – 4158

34. Facsimile Number (optional): () –

34. Operator: Does the "Owner" company also operate the source to which this application applies?

☐ No – *Proceed to Part F below.* ☒ Yes – *Enter "SAME AS OWNER" on line 35 and proceed to Part G below.*

PART F: Operator Information

35. Company Name of Operator: SAME AS OWNER

36. Name of Operator Contact Person:

37. Mailing Address:

City:

State:

ZIP Code: –

38. Telephone Number: () –

39. Facsimile Number (optional): () –

Continued on Next Page

PART G: Agent Information

40. Company Name of Agent: ENVIRON International Corporation

41. Type of Agent: ☒ Environmental Consultant ☐ Attorney ☐ Other (specify):

42. Name of Agent Contact Person: Mike Wieczorek

43. Mailing Address: 333 W. Wacker Dr. Suite 2700

City: Chicago

State: IL

ZIP Code: 60606 –

44. Electronic Mail Address (optional): mwieczorek@environcorp.com

45. Telephone Number: (312) 288 – 3879

46. Facsimile Number (optional): () –

47. Request for Follow-up: Does the "Agent" wish to receive a copy of the preliminary findings during the public notice period (if applicable) and a copy of the final determination? ☐ No ☒ Yes

PART H: Local Library Information

48. Date application packet was filed with the local library: Within 10 days of submittal

49. Name of Library: Lawrenceburg Public Library

50. Name of Librarian (optional):

51. Mailing Address: 150 Mary Street

City: Lawrenceburg

State: IN

ZIP Code: 47025 –

52. Internet Address (optional):

53. Electronic Mail Address (optional):

54. Telephone Number: (812) 537 – 2775

55. Facsimile Number (optional): (812) 537 – 2810

PART I: Company Name History (if applicable)

Complete this section only if the source has previously operated under a legal name that is different from the name listed above in Section A.

56. Legal Name of Company

57. Dates of Use

MGPI of Indiana, LLC

12/2011 to present

Lawrenceburg Distillers Indiana, LLC

07/2007 to 12/2011

Pernod Richard USA, Seagram Lawrenceburg Distillery

4/2002 to 06/2007

Joseph E. Seagram and Sons, Inc.

start of op. to 3/2002

to

to

to

to

to

to

58. Company Name Change Request: Is the source officially requesting to change the legal name that will be printed on all official documents issued by IDEM, OAQ?

☒ No ☐ Yes – **Change Company Name to:**

Continued on Next Page

Complete this section only if the source is portable and the location has changed since the previous permit was issued. The current location of the source should be listed in Section A.

[illegible]

Complete this section to request a change of location for a portable source.

62. Current Location:			
Address: N/A			
City:	State:	ZIP Code:	–
County Name:			
63. New Location:			
Address:			
City:	State:	ZIP Code:	–
County Name:			

PART L: Source Process Description

Complete this section to summarize the main processes at the source.

64. Process Description	65. Products	66. SIC Code	67. NAICS Code
Food and Kindred Spirits	Distilled and Blended Liquors	2085	31214

PART M: Existing Approvals (if applicable)

Complete this section to summarize the approvals issued to the source since issuance of the main operating permit.

68. Permit ID	69. Emissions Unit IDs	70. Expiration Date
029-32119	Part 70 Operating Permit Renewal (issued 6/20/2014)	June 20, 2019

PART N: Unpermitted Emissions Units (if applicable)

Complete this section only if the source has emission units that are not listed in any permit issued by IDEM, OAQ.

71. Emissions Unit ID	72. Type of Emissions Unit	73. Actual Dates		
		Began Construction	Completed Construction	Began Operation
N/A				

PART O: New or Modified Emissions Units (if applicable)

Complete this section only if the source is proposing to add new emission units or modify existing emission units.

74. Emissions Unit ID	75. NEW	76. MOD	77. Type of Emissions Unit	78. Estimated Dates		
				Begin Construction	Complete Construction	Begin Operation
EU-39 Proposed	Y		Direct-fired Rotary Dryer	5/1/2015	6/1/2015	6/15/2015



OAQ GENERAL SOURCE DATA APPLICATION

GSD-02: Plant Layout Diagram

State Form 51605 (R3 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of GSD-02 is to provide a diagram of the entire plant site. This form and a Plant Layout diagram are required for all air permit applications. If you do not provide the necessary information, applicable to your source, the application process may be stopped.
- IDEM, OAQ has provided detailed instructions for this form and an example of a basic plant layout diagram on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Basic Plant Layout

Part A provides IDEM, OAQ with the appropriate information about all buildings and access-limiting features in and around the plant site. **Please use this table as a checklist.** You must provide scaled drawings, with the actual scale shown. All dimensions and units must be clearly indicated with a brief explanation of what is being shown. Include the following (*All measurements should be given in feet.*):

1. <input checked="" type="checkbox"/> Building Location and Dimensions		
2. <input checked="" type="checkbox"/> Property Lines and Access-Limiting Features		
3. <input checked="" type="checkbox"/> Surrounding Building Location and Dimensions		
4. <input checked="" type="checkbox"/> Distances to Property Lines and Access-Limiting Features		
5. <input checked="" type="checkbox"/> UTM Location Coordinates	6. <input checked="" type="checkbox"/> Compass (pointing North)	7. <input checked="" type="checkbox"/> Scale

Part B: Stack Information

Part B provides IDEM, OAQ with the appropriate information about all stacks, roof monitors, control devices, and process vents at the plant site. **Please use this table as a checklist.** You must show the location of all applicable emission points and include all relevant stack and emissions unit identification numbers for each. In addition, you will need to identify each of these emission points under "Stack Identification" on form GSD-04, Stack/Vent Information. Include the following (*All measurements should be in feet.*):

8. <input checked="" type="checkbox"/> Exhaust Stacks		
9. <input checked="" type="checkbox"/> Process Vents		
10. <input type="checkbox"/> Roof Monitors	<input checked="" type="checkbox"/> No Roof Monitors	
11. <input checked="" type="checkbox"/> Control Devices	<input type="checkbox"/> No Control Devices	
12. <input type="checkbox"/> Interior Vents	<input checked="" type="checkbox"/> No Interior Vents	<input checked="" type="checkbox"/> Doors and Windows (<i>for processes vented inside a building</i>)

Part C: Roadway Information

Part C provides IDEM, OAQ with the appropriate information about the roadways in and around the plant site. **Please use this table as a checklist.** Include the following (*All measurements should be in feet.*):

13. <input checked="" type="checkbox"/> Adjacent Roadways	<input checked="" type="checkbox"/> Interior Roadways
14. <input checked="" type="checkbox"/> Roadway Surface Description (gravel, dirt, paved, etc.)	
15. <input checked="" type="checkbox"/> Number of Lanes	

Part D: Source Building Information

This table provides detailed information about each building at the plant site that is part of the source. If additional space is needed, you may make a copy of this table. (All measurements should be given in feet.)

[illegible]

Continued on Next Page

Part E: Surrounding Building / Residence Information

This table provides detailed information about each building or residence surrounding the plant site. If additional space is needed, you may make a copy of this table. *(All measurements should be given in feet.)*

[illegible]

Continued on Next Page

Part F: Plant Layout Diagram

This space provides a place for a hand drawn plant layout diagram. It is **optional** to use this space to create your plant layout, but you must include the diagram with your application. If you choose to submit the plant layout in a different format, state "plant layout attached" in the space provided, and submit the information with your completed application. IDEM, OAQ has provided an example of a basic plant layout diagram on the Air Permit Applications Forms website.

See attached Figure 2.



OAQ GENERAL SOURCE DATA APPLICATION

GSD-03: Process Flow Diagram

State Form 51599 (R3 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch

100 N. Senate Avenue, MC 61-53 Room 1003

Indianapolis, IN 46204-2251

Telephone: (317) 233-0178 or

Toll Free: 1-800-451-6027 x30178 (within Indiana)

Facsimile Number: (317) 232-6749

www.IN.gov/idem

NOTES:

- The purpose of GSD-03 is to provide a checklist for identifying the information to be included on each Process Flow diagram.
- Complete this form and submit a process flow diagram for each process included in your air permit application.
- IDEM, OAQ has provided detailed instructions for this form and an example of a basic process flow diagram on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Process Flow Diagram

Part A provides basic information to understanding the nature of the process. Please use this table as a checklist to indicate that you have included the following items on your process flow diagram (*All throughputs should be given in pounds per hour.*):

- | | | |
|--|---|---|
| 1. <input checked="" type="checkbox"/> Process Description: See Section 2 | 3. <input checked="" type="checkbox"/> Raw Material Input | 4. <input checked="" type="checkbox"/> Process Throughput |
| 2. <input checked="" type="checkbox"/> Process Equipment | | |
| 5. <input checked="" type="checkbox"/> Additions <input checked="" type="checkbox"/> Deletions <input checked="" type="checkbox"/> Modifications | | |

Use the space below to briefly explain the impacts of the additional equipment, the reason for removing any equipment, and/or the reason for the proposed modification. (*If additional space is needed, please attach a separate sheet with the information and indicate in the space below that additional information is attached.*)

The new direct-fired dryer will be equipped with an integrated thermal oxidizer (TO) to control emissions of volatile organic compounds (VOCs). The dryer will not debottleneck existing site operations. See Section 2 for a complete description.

Part B: Process Operation Schedule

Part B indicates the actual (or estimated actual) hours of operation for the process.

- | |
|---|
| 6. <input checked="" type="checkbox"/> Process Operation Schedule <u>24</u> Hours per Day <u>7</u> Days per Week <u>52</u> Weeks Per Year |
|---|

7. **Scheduled Downtime:** Use the space below to include as much information as is known about scheduled periods of downtime for this process. (*If additional space is needed, please attach a separate sheet with the information and indicate in the space below that additional information is attached.*)

None

Part C: Emissions Point Information

Part C provides information about each potential outlet of air pollutant emissions to the atmosphere. Please use this table as a checklist to indicate that you have included the following items on your process flow diagram (*All throughputs should be given in pounds per hour.*):

- | |
|---|
| 8. <input checked="" type="checkbox"/> Stack / Vent Information |
| 9. <input checked="" type="checkbox"/> Pollutants Emitted |
| 10. <input checked="" type="checkbox"/> Air Pollution Control |

Part D: Process Flow Diagram

This space provides a place for a hand drawn process flow diagram. It is **optional** to use this space to create your process flow diagram, but you must include the diagram with your application. If you choose to submit the process flow diagram in a different format, state "process flow diagram attached" in the space provided, and submit the information with your completed application. IDEM, OAQ has provided an example of a basic process flow diagram on the Air Permit Applications Forms website.

See attached Figure 3.

OAQ GENERAL SOURCE DATA APPLICATION

GSD-04: Stack / Vent Information

State Form 51606 (R3 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to provide basic information about each stack or vent that has the potential to emit air pollutants. If you do not provide enough information to adequately describe each process vent and/or stack, the application process may be stopped. This form is required for all air permit applications.
- Detailed instructions for this form are available online on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Stack / Vent Information

This table provides detailed information about each stack or vent through which air pollutants could be released into the atmosphere. If an air stream is vented inside a building, the vent does not need to be listed on this form. If additional space is needed, you may make a copy of this form.

[illegible]



IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to provide basic information about each emissions unit that has the potential to emit air pollutants. This form is required for all air permit applications.
- Detailed instructions for this form are available online on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

[illegible]



NOTES:

- The purpose of this form is to provide basic information about each source of particulate emissions. This form is required for all air permit applications.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A provides a summary of the type and amount of particulate emissions at the source. The state rules on particulate emissions are found in Title 326 of the Indiana Administrative Code, Article 6, Particulate Rules. If you do not provide enough information to adequately describe each source of particulate emissions, the application process may be stopped. If additional space is needed, you may make a copy of this table.

MGP-EPA0001348

Part B: Control of Particulate Emissions

Part C gathers information about how each source of particulate emissions is controlled. If you do not provide enough information to adequately describe how each source of particulate emissions is controlled, the application process may be stopped. If additional space is needed, you may make a copy of this table.

10. Emissions Point ID	11. Control Measure	12. Control Measure Description	13. Control Plan
EU-39 (Proposed DDG Dryer)	<input type="checkbox"/> No Control <input type="checkbox"/> Dust Suppression <input checked="" type="checkbox"/> Other: <u>cyclone/RTO</u>	Dryer exhaust will be routed through cyclone/ RTO controls prior to venting to the atmosphere.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date Submitted: _____
	<input type="checkbox"/> No Control <input type="checkbox"/> Dust Suppression <input type="checkbox"/> Other: _____	Source was permitted prior to 1985 so the requirements of 326 IAC 6-5 do not apply pursuant to 326 IAC 6-5-1(b)	<input type="checkbox"/> Yes <input type="checkbox"/> No Date Submitted: _____
	<input type="checkbox"/> No Control <input type="checkbox"/> Dust Suppression <input type="checkbox"/> Other: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Date Submitted: _____
	<input type="checkbox"/> No Control <input type="checkbox"/> Dust Suppression <input type="checkbox"/> Other: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Date Submitted: _____
	<input type="checkbox"/> No Control <input type="checkbox"/> Dust Suppression <input type="checkbox"/> Other: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Date Submitted: _____
	<input type="checkbox"/> No Control <input type="checkbox"/> Dust Suppression <input type="checkbox"/> Other: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Date Submitted: _____
	<input type="checkbox"/> No Control <input type="checkbox"/> Dust Suppression <input type="checkbox"/> Other: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Date Submitted: _____
	<input type="checkbox"/> No Control <input type="checkbox"/> Dust Suppression <input type="checkbox"/> Other: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Date Submitted: _____

Air Permitting Rules 326 IAC 6-4 and 326 IAC 6-5 require fugitive dust to be controlled as needed to prevent dust from visibly crossing property lines. Parts C and D summarize sources of fugitive particulate emissions from process operations and unpaved roads.

PART C: Fugitive Dust (if applicable)

Part C identifies measures implemented for controlling fugitive particulate emissions from process operations and unpaved roads.

14. Dust Control Plans: Check all that apply.

15. Control Measures:

- | | | | |
|---|-------------------------------|---|---|
| <input checked="" type="checkbox"/> Conveying: | <input type="checkbox"/> Wet | <input checked="" type="checkbox"/> Dry | Conveyors of proposed dryer will be completely enclosed |
| <input type="checkbox"/> Stock Piles: | <input type="checkbox"/> Open | <input type="checkbox"/> Covered | |
| <input type="checkbox"/> Unpaved Roads: <i>Watered?</i> | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| <input type="checkbox"/> Other (specify): | | | |
| <input type="checkbox"/> Other (specify): | | | |
| <input type="checkbox"/> Other (specify): | | | |

PART D: Vehicular Traffic on Unpaved Roads (if applicable)

Part D gathers information on vehicular traffic patterns when the site contains unpaved roads. All data should be provided assuming peak hours of vehicular traffic. Two one-way trips equal one round trip. For external traffic (vehicles entering and leaving the property lines), the distance from the plant to the property line is the one-way trip distance.

16. Average Silt Content of Unpaved Roads:

17. Vehicle Description	18. Max. No. round trips at peak hours (trips/hr)	19. Distance of one-way trip (miles/trip)	20. Max. vehicle speed (mph)	21. Max. gross vehicle weight (fully loaded) (tons)	22. Tare weight (tons)	23. No. of wheels on vehicle (wheels)



NOTES:

- The purpose of this form is to provide the actual and potential emissions of each criteria pollutant emitted from the source. This form is required for all air permit applications.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A provides the actual and potential emissions of each criteria pollutant emitted from each emissions unit. If you do not provide enough information to adequately describe the emissions from each emissions unit, the application process may be stopped.

MGP-EPA0001351

Part B: Pollutant Emissions Summary

Part B provides the total actual and potential emissions of each criteria pollutant emitted from the source (including all emissions units and fugitive emissions at the source). If you do not provide enough information to adequately describe the total source emissions, the application process may be stopped.

6. Criteria Pollutant	7. Actual Emissions		8. Potential To Emit	
	Standard Units	Tons Per Year	Standard Units	Tons Per Year
Carbon Monoxide (CO)	See Tables 1 & 2		See Tables 1 & 2	
Lead (Pb)				
Nitrogen Oxides (NO _x)				
Particulate Matter (PM)				
Particulate Matter less than 10µm (PM ₁₀)				
Particulate Matter less than 2.5µm (PM _{2.5})				
Sulfur Dioxide (SO ₂)				
Volatile Organic Compounds (VOC)				
Other (specify):				

Part C: Fugitive VOC Emissions (if applicable)

Part C summarizes the sources of fugitive VOC emissions at the source and estimates VOC emissions from these emission points. Complete this table if you are required to provide fugitive emissions data pursuant to 326 IAC 2-2 or 326 IAC 2-3.

9. Fugitive Emissions Source	10. Emission Factor (lb/hr)	11. Number Leaking	12. Uncontrolled Potential To Emit	
			Pounds Per Hour	Tons Per Year
Compressor Seals				
Flanges				
Open-Ended Lines				
Pressure Relief Seals				
Pump Seals				
Sampling Connections				
Valves				
Other (specify):				



NOTES:

- The purpose of this form is to provide the actual and potential emissions of each hazardous air pollutant emitted from the source. This form is required for all air permit applications.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A provides the actual and potential emissions of each hazardous air pollutant emitted from each emissions unit. If you do not provide enough information to adequately describe the emissions from each emissions unit, the application process may be stopped.

MGP-EPA0001353

Part B: Pollutant Emissions Summary

Part B provides the total actual and potential emissions of each hazardous air pollutant emitted from the source (including all emissions units and fugitive emissions at the source). If you do not provide enough information to adequately describe the total source emissions, the application process may be stopped.

7. Hazardous Air Pollutant	8. CAS Number	9. Actual Emissions		10. Potential To Emit	
		Standard Units	Tons Per Year	Standard Units	Tons Per Year
See Tables 1 and 2					

Part C: Fugitive HAP Emissions (if applicable)

Part C summarizes the sources of fugitive HAP emissions at the source and estimates HAP emissions from these emission points. Complete this table if you are required to provide fugitive emissions data pursuant to 326 IAC 2-2 or 326 IAC 2-3.

11. Fugitive Emissions Source	12. Hazardous Air Pollutant	13. Emission Factor (lb/hr)	14. Number Leaking	15. Uncontrolled Potential To Emit	
				Pounds Per Hour	Tons Per Year
Compressor Seals	N/A				
Flanges					
Open-Ended Lines					
Pressure Relief Seals					
Pump Seals					
Sampling Connections					
Valves					
Other (specify):					



OAQ PROCESS INFORMATION APPLICATION

PI-01: Miscellaneous Process

State Form 52534 (R2 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch

100 N. Senate Avenue, MC 61-53 Room 1003

Indianapolis, IN 46204-2251

Telephone: (317) 233-0178 or

Toll Free: 1-800-451-6027 x30178 (within Indiana)

Facsimile Number: (317) 232-6749

www.IN.gov/idem

NOTES:

- The purpose of this form is to obtain detailed information about the process. Complete one form for each process unit (or group of identical process units). This is a required form.
- Detailed instructions for this form are available online on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

PART A: Process Information

Part A identifies the process. If there are multiple process units that are identical in nature, capacity, and use, you may use one form to summarize the data for the identical process units.

1. Unit ID: Direct-fired Rotary Dryer

2. Installation Date: 5/1/2015
(actual or anticipated)

3. How many (identical) process units are identified in this form? ☒ One ☐ More than one (specify number) : _____

4. Process Description:

Direct-fired DDG dryer (proposed EU-39) equipped with cyclone and regenerative thermal oxidizer controls for control of VOC, HAP, PM and CO emissions.

5. Maximum Production Rate (specify units): 9.56 ton/hr DDG produced

6. Fuel Used: ☐ Not Applicable ☒ Natural Gas Only ☐ Other – Attach completed PI-02F form.

7. Add-On Control Technology: Identify all control technologies used for this unit, and attach completed CE-01 (unless "none").

- ☐ None
- ☐ Baghouse / Fabric Filter – Attach CE-02. ☒ Cyclone – Attach CE-03.
- ☐ Electrostatic Precipitator – Attach CE-04. ☐ Absorption / Wet Collector / Scrubber – Attach CE-05.
- ☒ Oxidizer / Incinerator – Attach CE-06. ☐ Adsorber – Attach CE-07.
- ☐ Condenser – Attach CE-08. ☐ Reduction – Attach CE-09.
- ☐ Other (specify): _____ – Attach CE-10.

8. Control Techniques: Identify all control techniques used for this process.

Add-on control technologies as described above.

9. Process Limitations / Additional Information: Identify any acceptable process limitations. Attach additional information if necessary.

Proposed direct-fired DDG Dryer (proposed EU-39) and existing steam-tube dryers (portion of exiting EU-32) will not operate concurrently. Existing steam tube dryers will be limited to 147,000 ton/yr feed throughput.

PART B: Emission Factors

Part B identifies all emission factors used to calculate air emissions from this process.

10. Process Unit (& ID, if applicable)	11. Air Pollutant	12. Emission Factor		13. Source of Emission Factor (if not using AP-42, include calculations)
		value	units	
	See Appendix C			<input type="checkbox"/> AP-42 <input type="checkbox"/> Other
				<input type="checkbox"/> AP-42 <input type="checkbox"/> Other
				<input type="checkbox"/> AP-42 <input type="checkbox"/> Other
				<input type="checkbox"/> AP-42 <input type="checkbox"/> Other
				<input type="checkbox"/> AP-42 <input type="checkbox"/> Other
				<input type="checkbox"/> AP-42 <input type="checkbox"/> Other

PART C: Processed Materials

Part C identifies the materials processed and the raw material usage.

14. Materials Processed	15. Raw Materials Usage Rate (lb/hr)
Natural Gas	0.05 MMscf/hr
DDG	9.56 ton/hr produced
Water (contained in wet cake fed to dryer)	30,000 lb/hr evaporate

PART D: Federal Rule Applicability

Part D identifies any federal rules that apply to the process.

- 16. Is a New Source Performance Standard (NSPS) applicable to this source?** ☐ Yes ☒ No
Attach a completed FED-01 for each rule that applies.
40 CFR Part 60, Subpart _____
- 17. Is a National Emission Standard for Hazardous Air Pollutants (NESHAP) applicable to this source?** ☐ Yes ☒ No
Attach a completed FED-01 for each rule that applies.
40 CFR Part 61, Subpart _____
40 CFR Part 63, Subpart _____
- 18. Non-Applicability Determination:** *Provide an explanation if the process unit appears subject to a rule (based on the rule title or the source category), but the rule will not apply.*
See Section 4



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- The purpose of CE-01 is to summarize all of the equipment used to control emissions. This is a required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

[illegible]



OAQ CONTROL EQUIPMENT APPLICATION
CE-03: Particulate Control – Cyclone
State Form 52620 (R / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CE-03 is to identify all the parameters that describe the cyclone. This is a required form.
- Complete this form once for each cyclone (or once for each set of identical cyclones).
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification and Description of Control Equipment

Part A identifies the particulate control device and describes its physical properties.

1. **Control Equipment ID:** CE-39a
2. **Installation Date:** 5/1/2015
3. **Number of Tubes:** 4 *For multiple tubes:* ☒ Parallel ☐ Series
4. **Is an Alarm / Detector installed on this device?** *If yes, describe the alarm or detector system.* ☒ Yes ☐ No
High level alarms will be installed at the bottom of each cyclone.

PART B: Operational Parameters

Part B provides the operational parameters of the control device and the pollutant laden gas stream. Appropriate units must be included if the standard units are not used.

	A. Units	B. Inlet	C. Outlet	D. Differential
5. Gas Stream Flow Rate	ACFM	15,000 each		15,000 each
6. Gas Stream Temperature	°F	210-220		210-220
7. Gas Stream Pressure	inches of water	3-6		to
8. Moisture Content	%	40-45 (vol)		45-45 (vol)
9. Average Particle Size Range	micrometers			to
10. Other (specify):				

PART C: Pollutant Concentrations

Part C provides the pollutant concentrations of the pollutant laden gas stream.

	11. Units	12. Inlet	13. Outlet	14. Efficiency (%):	
				Capture	Control
<input type="checkbox"/> a. Hazardous Air Pollutant (HAP) (specify):					
<input type="checkbox"/> b. Particulate Matter (PM)	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> c. Particulate Matter less than 10µm (PM ₁₀)	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> d. Particulate Matter less than 2.5µm (PM _{2.5})	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> e. Other Pollutant (specify):					

PART D: Monitoring, Record Keeping, & Testing Procedures

Part D identifies any existing or proposed monitoring, record keeping, & testing procedures that may need to be included in the permit.

15. Item(s) Monitored:	Visible emissions			
16. Monitoring Frequency:	Daily			
17. Item(s) Recorded:	Presence of visible emissions			
18. Record Keeping Frequency:	Daily log			
19. Pollutant(s) Tested:	N/A			
20. Test Method(s):	N/A			
21. Testing Frequency:	N/A			

PART E: Preventive Maintenance Plan

Part E verifies that a complete Preventive Maintenance Plan (PMP) has been prepared for the control device, if applicable. Use this table as a checklist to ensure that the PMP is complete.

22. Do you have a Preventive Maintenance Plan (PMP)?

- ☐ No PMP is needed. ☒ Yes – the following items are identified on the PMP:
- ☒ A. Identification of the individual(s) responsible for inspecting, maintaining and repairing emission control devices.
 - ☒ B. Description of the items or conditions that will be inspected.
 - ☒ C. Schedule for inspection of items or conditions described above.
 - ☒ D. Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

PART F: Determination of Integral Control

Part F provides explanation to determine whether the control device should be considered integral to the process.

23. Has IDEM already made an integral control determination for this device?

If "Yes", provide the following:

☒ No ☐ Yes

Permit Number:

Issuance Date:

Determination: ☐ Integral ☐ Not Integral

24. Is this device integral to the process?

If "Yes", provide the reason(s) why the device is integral.

☐ No ☐ Yes



OAQ CONTROL EQUIPMENT APPLICATION
CE-06: Organics – Flare / Oxidizer / Incinerator
State Form 52623 (R / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CE-06 is to identify all the parameters that describe the oxidizer or incinerator. This is a required form.
- Complete this form once for each oxidizer or incinerator (or once for each set of identical oxidizers or incinerators).
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification and Description of Control Equipment

Part A identifies the control device and describes its physical properties.

1. Control Equipment ID:	CE-39b		
2. Installation Date:	5/1/2015		
3. Incineration Method:	<input type="checkbox"/> Flare <input checked="" type="checkbox"/> Thermal Oxidizer <input type="checkbox"/> Catalytic Oxidizer <input type="checkbox"/> Other (specify):		
4. Residence Time (specify units):	0.41 seconds		
5. Hood Static Pressure (specify units):	2 in WC	Negative Pressure?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6. Bed Temperature at the Flame Zone:	1600 °F		
7. Fuel Used:	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Natural Gas Only <input type="checkbox"/> Other – Attach completed PI-02F form.		
8. Is the Gas Stream used as Overfire Air?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes: Combustion Unit ID:		
9. Location of Flame (flares only):	<input type="checkbox"/> Ground Level <input type="checkbox"/> Other (specify elevation and units of measure):		
10. Are Flame Arrestors used? (flares only)	<input type="checkbox"/> No <input type="checkbox"/> Yes		
11. Are Steam Jets used? (flares only)	<input type="checkbox"/> No <input type="checkbox"/> Yes		
12. How is the flare used? (flares only)	<input type="checkbox"/> Emergency only <input type="checkbox"/> Normal Operation <input type="checkbox"/> Other (specify):		
13. Catalyst Material:	<input checked="" type="checkbox"/> None <input type="checkbox"/> Specify:		
14. Number of Catalyst Beds:	<input checked="" type="checkbox"/> Not Applicable		
15. Is the Catalyst Cleaned and reused on-site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable		
16. Is a Heat Exchanger used to recover heat on this device?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
17. Heat Exchanger Type:	<input type="checkbox"/> Recuperator <input checked="" type="checkbox"/> Regenerator <input type="checkbox"/> Other (specify): <input type="checkbox"/> Not Applicable		

PART B: Operational Parameters

Part B provides the operational parameters of the control device and the pollutant laden gas stream.

	A. Units	B. Inlet	C. Outlet	D. Differential
18. Organic Vapor Concentration (by volume)	ppmv	See Table C1	See Table C1	See Table C1
19. Gas Stream Flow Rate	ACFM	37,500	44,848	
20. Moisture Content	%	40-45	40-45	
21. Heat Content (for Flares)	%	N/A	N/A	
22. Excess Oxygen (for Oxidizers)	%	12	12	
23. Particle Size Range	micrometers			to
24. Other (specify):				

PART C: Pollutant Concentrations

Part C provides the pollutant concentrations of the pollutant laden gas stream.

	25. Units	26. Inlet	27. Outlet	28. Efficiency (%):	
				Capture	Control
<input type="checkbox"/> a. Carbon Monoxide (CO)	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> b. Hazardous Air Pollutant (HAP) (<i>specify</i>):	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> c. Particulate Matter (PM)	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> d. Particulate Matter less than 10 μ m (PM ₁₀)	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> e. Particulate Matter less than 2.5 μ m (PM _{2.5})	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> f. Volatile Organic Compounds (VOC)	See Table C1	See Table C1	See Table C1		
<input type="checkbox"/> g. Other Pollutant (<i>specify</i>):					

PART D: Monitoring, Record Keeping, & Testing Procedures

Part D identifies any existing or proposed monitoring, record keeping, & testing procedures that may need to be included in the permit.

29. Item(s) Monitored:	RTO Operating Temperature	Duct pressure or fan amps.		
30. Monitoring Frequency:	continuous	1 x per day		
31. Item(s) Recorded:	3-hr block average temp.	Duct pressure or fan amps.		
32. Record Keeping Frequency:	continuous	1 x per day		
33. Pollutant(s) Tested:	VOC	--		
34. Test Method(s):	Method 25A/18	--		
35. Testing Frequency:	initial	--		

PART E: Preventive Maintenance Plan

Part E verifies that a complete Preventive Maintenance Plan (PMP) has been prepared for the control device, if applicable. Use this table as a checklist to ensure that the PMP is complete.

36. Do you have a Preventive Maintenance Plan (PMP)?

☐ No PMP is needed.

☒ Yes – the following items are identified on the PMP:

- ☒ A. Identification of the individual(s) responsible for inspecting, maintaining and repairing emission control devices.
- ☒ B. Description of the items or conditions that will be inspected.
- ☒ C. Schedule for inspection of items or conditions described above.
- ☒ D. Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

This space is intentionally left blank.



OAQ COMPLIANCE DETERMINATION APPLICATION CD-01: Emissions Unit Compliance Status

State Form 51861 (R / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch

100 N. Senate Avenue, MC 61-53 Room 1003

Indianapolis, IN 46204-2251

Telephone: (317) 233-0178 or

Toll Free: 1-800-451-6027 x30178 (within Indiana)

Facsimile Number: (317) 232-6749

www.IN.gov/idem

NOTES:

- The purpose of CD-01 is to identify the requirements that apply to each emissions unit at the permitted source and to determine the compliance status of these emissions units.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Emissions Unit

Part A identifies the source and the emissions unit. For the purposes of this form, the term “source” refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name:	MGPI of Indiana, LLC	2. Source ID:	029 – 00005
3. Emissions Unit Description:	Direct-fired Rotary Dryer	4. Unit ID:	EU-39

PART B: Regulatory Compliance Status

Part B identifies the regulatory requirements that apply to the emissions unit and to determine the compliance status of the emissions unit. These “regulatory requirements” are those required by federal, state, or local law.

5. Rule Cite	6. Description	7. State / Local Only	8. Limitation	9. Test Method	10. In Compliance (y/n)
326 IAC 5-1	Opacity Limitations	Yes	30% in any one 6-minute averaging period or 60% for more than a cumulative total of 15 minutes in a 6-hour period	Method 9	Y
326 IAC 6-3-2	PM Limitations for Manufacturing Processes	No	$E=4.10 P^{0.67}$; Allowable particulate emission rate	No Test Required	Y
326 IAC 2-6	Emission Reporting	Yes	Annual reporting required on July 1 of each year	No Test Required	Y
326 IAC 6-4	Fugitive Dust Emissions Limitations	Yes	Facility shall not allow fugitive dust to escape beyond property line/boundary, right of way or easement on which the source is located	No Test Required	Y
326 IAC 2-7-5(12)	Preventive Maintenance Plan	Yes	Maintain and implement and Preventive Maintenance Plan	No Test Required	Y
326 IAC 8-1-6	General VOC Reduction	Yes	BACT analysis for VOC (see Section 5)	Initial testing according to Method 18/ Method 25A	Y

PART C: Compliance Status – Other Requirements

Part C identifies any other requirements that apply to the emissions unit and to determine the compliance status of the emissions unit. These “other requirements” would not be required by federal, state, or local law.

11. Other Requirements	12. State / Local Only	13. In Compliance (y/n)



OAQ COMPLIANCE DETERMINATION APPLICATION
CD-02: Compliance Plan Requirements Per Applicable Requirement

State Form 51862 (R2 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
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Facsimile Number: (317) 232-6749
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NOTES:

- The purpose of CD-02 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-02 focuses on generally applicable requirements that apply to many or all emission units at the source.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the applicable requirement. Use one form for each applicable requirement. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: MGPI of Indiana, LLC **2. Source ID:** 029 – 00005

3. Applicable Requirement: Opacity Limit

4. Rule Cite: 326 IAC 5-1

5. Limitations: List each operational and/or emission limit specified in the applicable requirement.

Dearborn County Opacity Limit

6. Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

No reporting will be required by the regulations listed above. Annual compliance certifications will confirm compliance with these opacity requirements.

Part B identifies the main components of each required compliance plan.

MGP-EPA0001365



OAQ COMPLIANCE DETERMINATION APPLICATION
CD-02: Compliance Plan Requirements Per Applicable Requirement

State Form 51862 (R2 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CD-02 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-02 focuses on generally applicable requirements that apply to many or all emission units at the source.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the applicable requirement. Use one form for each applicable requirement. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: MGPI of Indiana, LLC **2. Source ID:** 029 – 00005

3. Applicable Requirement: Particulate Emissions

4. Rule Cite: 326 IAC 6-3-2

5. Limitations: List each operational and/or emission limit specified in the applicable requirement.

The particulate emissions from Rotary Dryer No. 1 shall not exceed $E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour; and P = process weight rate in tons per hour

6. Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

Emissions will continue to be reported in accordance with 326 IAC 6-3-2

Part B identifies the main components of each required compliance plan.

MGP-EPA0001367



OAQ COMPLIANCE DETERMINATION APPLICATION
CD-02: Compliance Plan Requirements Per Applicable Requirement

State Form 51862 (R2 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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NOTES:

- The purpose of CD-02 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-02 focuses on generally applicable requirements that apply to many or all emission units at the source.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the applicable requirement. Use one form for each applicable requirement. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: MGPI of Indiana, LLC **2. Source ID:** 029 – 00005

3. Applicable Requirement: Emissions Reporting

4. Rule Cite: 326 IAC 2-6

5. Limitations: List each operational and/or emission limit specified in the applicable requirement.

Emissions reporting required for the source

6. Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

Emissions reporting to be submitted annually on or prior to July 1.

Part B identifies the main components of each required compliance plan.

MGP-EPA0001369



OAQ COMPLIANCE DETERMINATION APPLICATION
CD-02: Compliance Plan Requirements Per Applicable Requirement

State Form 51862 (R2 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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NOTES:

- The purpose of CD-02 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-02 focuses on generally applicable requirements that apply to many or all emission units at the source.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the applicable requirement. Use one form for each applicable requirement. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: MGPI of Indiana, LLC

2. Source ID: 029 – 00005

3. Applicable Requirement: Fugitive Dust Emissions

4. Rule Cite: 326 IAC 6-4

5. Limitations: List each operational and/or emission limit specified in the applicable requirement.

Fugitive dust emissions limitation- Facility shall not allow fugitive dust to escape beyond property line/boundary, right of way or easement on which the source is located.

6. Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

Emissions will be reported in accordance with 326 IAC 6-4.

Part B identifies the main components of each required compliance plan.

MGP-EPA0001371



OAQ COMPLIANCE DETERMINATION APPLICATION
CD-02: Compliance Plan Requirements Per Applicable Requirement

State Form 51862 (R2 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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NOTES:

- The purpose of CD-02 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-02 focuses on generally applicable requirements that apply to many or all emission units at the source.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the applicable requirement. Use one form for each applicable requirement. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: MGPI of Indiana, LLC **2. Source ID:** 029 – 00005

3. Applicable Requirement: Preventive Maintenance Plan

4. Rule Cite: 326 IAC 2-7-5

5. Limitations: List each operational and/or emission limit specified in the applicable requirement.

Facility shall maintain and implement a Preventive Maintenance Plan.

6. Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

No reporting required in accordance with 326 IAC 2-7-5. The plan shall be forwarded to IDEM upon request.

Part B identifies the main components of each required compliance plan.

MGP-EPA0001373



OAQ COMPLIANCE DETERMINATION APPLICATION
CD-03: Compliance Plan Requirements Per
Emissions Unit

State Form 51863 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CD-03 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-03 focuses on specific applicable requirements that may apply to a single emission unit or group of emission units.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the emissions unit. Use one form for each emissions unit. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: MGPI of Indiana, LLC	2. Source ID: 029 – 00005
3. Emissions Unit Description: Direct fired rotary dryer	4. Unit ID: EU-39

5. Limitations: List each operational and/or emission limit for this emissions unit.

Dearborn County Opacity Limit (326 IAC 5-1)
PM Limit: $E = 4.10P^{0.67}$ (326 IAC 6-3-2)
Fugitive Dust Emission Limitation (326 IAC 6-4)
Preventive Maintenance Plan (326 IAC 2-7-5(12))
General VOC Reduction / VOC BACT (326 IAC 8-1-6)

6. Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

Summary of information to document compliance status with RTO monitoring to be reported on a quarterly basis.

Part B identifies the main components of each required compliance plan.

MGP-EPA0001375



OAQ COMPLIANCE DETERMINATION APPLICATION CD-04: Compliance Schedule and Certification

State Form 51864 (R2 / 1-10)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CD-04 is to provide a schedule of for compliance certification submittals, a certification of the source's compliance status with all applicable requirements, and a compliance schedule that details the measures a source will use to address non-compliance.
- Complete this form once per application (not once for each emissions unit) with respect to all applicable requirements at the source.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Source Identification and Compliance Schedule

Part A identifies the permitted source and the permit term compliance certification schedule.

1. **Source Name:** MGPI of Indiana, LLC

2. **Source ID:** 029 – 0005

3. Permit Term Compliance Certification Schedule

Date of first certification submittal: **Frequency of future submittals:** Annual

PART B: Risk Management Plan

Part B indicates whether sources subject to section 112(r), Accidental Release Prevention, are complying with the requirement to submit a Risk Management Plan (RMP).

4. **Statement of Applicability / Non-Applicability:** Indicate whether the source is subject to Section 112(r) and the requirement to submit and RMP.

☐ Source is subject to Section 112(r) and a Risk Management Plan (RMP) is required.

☒ Source is not subject to Section 112(r) and a Risk Management Plan (RMP) is not required.

RMP Submittal Information: Indicate when the RMP was submitted to each of the following agencies. If the RMP has not yet been submitted to any of the listed agencies, indicate the date when the RMP will be mailed to that agency. If the RMP for IDEM is attached to this application, please write "attached" in the Date Submitted column.

5. Agency Name	6. Date Submitted	7. Expected Submittal Date
Chemical Safety and Hazard Investigation Board (CSHIB)		
United States Environmental Protection Agency (U.S. EPA)		
Indiana Department of Environmental Management (IDEM)		
Local Agency responsible for permitting:		

8. **EPA Facility Identifier:** 26 – 233 – 0535

Part C states whether the source is or is not in full compliance with all applicable requirements and to identify corrective actions to be taken in cases of noncompliance.

☐ The source described in this air pollution control permit application is fully in compliance with all applicable requirements and will continue to comply with those requirements.

☒ FORM CD-01 includes new requirements that apply or will apply to the emissions unit during the term of the permit. The source will meet such requirements on a timely basis.

☐ The source described in this air pollution control permit application is fully in compliance with all applicable requirements, except for the emissions unit(s) listed below. Compliance will be achieved according to the schedule identified below.

[illegible]

☒ I certify that, based on information and belief formed after reasonable inquiry, the statements and information presented are true, accurate and complete.

Plant Manager _____
Title _____

Date _____

Appendix B
IDEM BACT Analysis Application Forms

ANALYSIS OF BEST AVAILABLE CONTROL TECHNOLOGY

Complete this form for each analysis of Best Available Control Technology (BACT). An individual BACT Analysis form should contain information regarding only one pollutant-facility combination; therefore, a facility with multiple pollutants subject to BACT would have multiple BACT Analyses for that facility.

A. Facility Background

Source:	MGPI of Indiana, LLC	Pollutant of Concern:	VOC
Facility:	Direct-fired DDG Dryer	Segment ID:	
Unit ID:	EU-39	SCC*:	2302070010
Stack ID:	S-320	Applicable Rule:**	326 IAC 8-1-6

* SCC refers to the Source Classification Code.

** 326 IAC 2-2 (Permit Review Rules: Prevention of Significant Deterioration (PSD) Requirements)

** 326 IAC 2-3 (Permit Review Rules: Emission Offset)

** 326 IAC 8-1-6 (Volatile Organic Compound Rules: New Facilities; General Reduction Requirements)

B. Facility Potential to Emit (PTE*) in tons per year (tpy)

Carbon Monoxide (CO):	46.4	Particulate Matter less than 10 μ m (PM ₁₀):	8.38	Sulfur Dioxide (SO ₂):	18.8
Nitrogen Oxides (NO _x):	27.9	Total Particulates (PM):	8.38	Volatile Organic Compounds (VOCs):	8.38
Other (please specify):	Total HAPs = 1.18 tpy				

* PTE means Potential to Emit as defined in 326 IAC 2-1.1-1(16).

C. Summary of Existing BACT Determinations

Facility:	Direct-fired DDG Dryer	Unit ID:	EU-39	Pollutant:	VOC
------------------	-------------------------------	-----------------	--------------	-------------------	------------

Provide the following summary information regarding the top BACT Determinations from five sources with a facility similar to your own. List these determinations in top-down order from the most to the least effective in terms of emission reduction potential/lowest emission rate. (i.e., Source A should have the most stringent BACT Determination, and Source E should have the least stringent BACT Determination.) In addition, complete FORM BACT-01a BACKGROUND SEARCH - EXISTING BACT DETERMINATIONS to provide more detailed information regarding each of the five determinations to be listed below.

Source	Affected Facility	BACT Determination	Reference
A.Archer Daniels Midland	Corn Processing Plant- Cedar Rapids, IA	98% Reduction using 8 natural-gas fired DDGS dryers with combustion chambers. Emission control is by routing off-gases through the dryers' combustion chamber. Wet Feed throughput is 63 ton/hr and emission limit is 3.16 lb/hr at the dryer outlet.	IA-0088
B.Homeland Energy Solutions, LLC	Homeland Energy Solutions, LLC - Chickasaw County Facility, IA	98% Reduction using a thermal oxidizer (150 MM Btu/hr) with the two dryers. Emission control is via the use of the Thermal Oxidizer. Emission limit is 0.006 lb/MMBtu	IA- 0089
C.Southwest Iowa Renewable Energy	Ethanol production facility - Pottawattamie County, IA	Required to meet 98% reduction or 10 ppmv using a thermal oxidizer rated at 18 MMBtu/hr. Emission limit is 5.11 lb/hr or 10 ppmv (per hour).	IA- 0092
D.Heartland Corn Products	Ethanol Fuel Grade plant - Sibley County - MN	Required to meet 95% control of VOC emissions using a thermal oxidizer and natural-gas fired dryer with an emission limit of 15.2 lb/hr. Dryer throughputs are 150 MMBTU/hr and 100 MMBtu/hr.	MN-0062
E.MGP Ingredients of Illinois	MGP Ingredients - Pekin - Tazewell County	Required to meet emission limit of 0.12 lb/MMBtu (3 hour average) using an Eco-Dry or comparable system that passes exhaust through the dryer	IL-0105

Refer to Chapter B of the A New Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

D. All BACT Options Considered					
List all BACT options considered, and identify which options are technically feasible. If a BACT option is determined to be technically infeasible, specify the reason in the Comments/Rationale column. Do not list items determined to be infeasible later in Tables E, F, G, and H.					
Facility:	Direct-fired DDG Dryer		Unit ID:	EU-39	Pollutant: VOC
BACT Option	Technically Feasible? (Y/N)	Comments / Rationale			
Thermal Oxidizer	Y	Chosen option with 98% VOC control			
Flare	Y	See Section 5			
Scrubber	Y	See Section 5			
Condensation	N	See Section 5			
Activated Carbon	N	See Section 5			

Refer to Chapter B of the A New Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

E. Ranking of Technically Feasible BACT Options

List all technically feasible BACT options ranked in descending order of Overall System Pollution Reduction Efficiency. Use this same ranking in Tables F, G, and H.

Facility:	Direct-fired DDG Dryer	Unit ID:	EU-39	Pollutant:	VOC
Baseline Emissions Rate (tpy):		418.8			
BACT Option	Post-BACT Emissions Rate (tpy)	Emissions Reduction (tpy) *	Overall System Pollution Reduction Efficiency (%)		
Thermal Oxidizer	8.38	410.42	98		
Flare	—	—	—		
Scrubber	—	—	—		
Condensation	—	—	—		
Activated Carbon	—	—	—		

* Emissions reduction in relation to PTE is the difference between the PTE before BACT is implemented and the PTE after BACT is implemented. Refer to Chapter B of the ANew Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

Provide the following economic information for each of the BACT options listed in Table E for which economic impacts are to be considered. Complete FORM BACT-01b COST/ECONOMIC IMPACT ANALYSIS for each option listed in this table.

* Refer to the AOffice of Air Quality Planning and Standards (OAQPS) Control Cost Manual@ (5th edition, February 1996) and Chapter B of the ANew Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

** Use this column to indicate whether any of the listed options may be economically infeasible.

G. Environmental Impact Analysis*

Provide the following information regarding environmental impacts for each of the BACT options listed in Table E.

Facility:	Direct-fired DDG Dryer		Unit ID:	EU-39	Pollutant:	VOC
BACT Option	Toxics Impact**		Adverse Impact***			
	Yes/No	amount/ton	Yes/No	amount/ton		
Thermal Oxidizer	Yes	0.093	Yes	See Section 5		
Flare	Yes	0.093	Yes	See Section 5		
Scrubber	Yes	0.093	Yes	See Section 5		
Condensation	N/A	N/A	N/A	See Section 5		
Activated Carbon	N/A	N/A	N/A	See Section 5		

* Refer to Chapter B of the A New Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

** Indicate whether air toxics are generated or eliminated due to the implementation of the BACT option. Quantify the amount generated or eliminated per ton of pollutant controlled.

*** Indicate whether other adverse environmental impacts are generated or eliminated due to the implementation of the BACT option. Quantify the amount of additional waste generated or eliminated per ton of pollutant controlled.

H. Energy Impact Analysis*						
Provide the following information regarding energy impacts** for each of the BACT options listed in Table E.						
Facility:	Direct-fired DDG Dryer		Unit ID:	EU-39	Pollutant:	VOC
BACT Option	Baseline (specify units):	1,120 BTU steam energy/ lb water evaporated by dryer				
	Incremental increase over baseline (specify units) 0					
Thermal Oxidizer	Total natural gas requirement for direct-fired dryer + RTO is estimated by the vendor to be essentially the same for a given evaporative load compared to existing steam-tube dryers. Increased energy consumption by dryer/RTO will be offset by decreased steam demand from existing facility boilers.					
Flare	N/A					
Scrubber	N/A					
Condensation	N/A					
Activated Carbon	N/A					

* Refer to Chapter B of the A New Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

** Energy impacts are the difference between the total project energy requirements without the BACT option and total project energy requirements with the BACT option.

I. BACT Recommendation

Facility:	Direct-fired DDG Dryer	Unit ID:	EU-39	Pollutant:	VOC
BACT Option Recommended:	Thermal Oxidation with 98% reduction of VOC emissions; VOC < 1.9 lb/hr				
JUSTIFICATION:	Top ranked BACT option chosen				

J. Additional Forms/Attachments

Indicate the number of each type of form included as part of this BACT analysis.	
1	FORM BACT-01a: BACKGROUND SEARCH - EXISTING BACT DETERMINATIONS (Mandatory)
1	FORM BACT-01b: COST / ECONOMIC IMPACT ANALYSIS (Mandatory for each economic consideration)
1	FORM BACT-02: SUMMARY OF BEST AVAILABLE CONTROL TECHNOLOGY (Mandatory)
0	FORM PSD/EO-01: PSD / EMISSION OFFSET CHECKLIST (Mandatory for 326 IAC 2-2 and/or 2-3)
1	Additional Attachments: List all supplemental documents in the space below.
Section 5 of Application for Permit	

BACKGROUND SEARCH - EXISTING BACT DETERMINATIONS					
Facility:	Homeland Energy Solutions, LLC	Unit ID:	IA-0089	Pollutant:	VOC
Complete all five tables of this form to provide more detailed information regarding the five determinations listed on Table C of FORM BACT-01 ANALYSIS OF BEST AVAILABLE CONTROL TECHNOLOGY.					

A. SOURCE 1	
Source	Homeland Energy Solutions, LLC.
City	New Hampton
State	IA
Regulatory Authority	Iowa Department of Natural Resources Air Quality
Permit	New/Greenfield Facility - Permit #-07-A-955P and 07-A-956P)
Date Issued	8/8/2007
Facility	Dry Mill Ethanol Plant - Thermal Oxidizer for HRSG from dryers and gasification - Two systems S10 & S11
Capacity (specify units)	Thermal Oxidizer - 150 MMBtu/hr & each dryer (2 Total) is 50 MMBtu/hr
BACT Determination	BACT- PSD
Compliance Achieved? (Yes/No)	YES - Thermal Oxidizer
Method of Compliance Determination	Unspecified
Actions Taken for Noncompliance	NA
Baseline Emissions Rate (specify units)	
Post-BACT Emissions Rate (specify units)	Required to meet 98% reduction - 0.006 lb/hr
Emissions Reduction Potential (%)	98%
Cost Effectiveness (\$/ton removed)	Not provided
Reference	RBLC Entry - IA-0089

Refer to Chapter B of the A New Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

Background Search - Existing BACT Determinations (continued)					
Facility:	Archer Daniels Midland Corn Processing - Cedar Rapids	Unit ID:	IA-0088	Pollutant:	VOC

B. SOURCE 2	
Source	Archer Daniels Midland
City	Cedar Rapids
State	IA
Regulatory Authority	Iowa Department of Natural Resources - Air Quality
Permit	Add New process to existing facility - Permit # 57-01-080
Date Issued	6/29/2007 & Updated 10/9/2007
Facility	ADM Corn Processing - Cedar Rapids - Indirect Fired DDGS Dryers (8)
Capacity (specify units)	Throughput 93.70 MMBtu/hr - Wet feed throughput of each dryer is 63ton/hr
BACT Determination	BACT - PSD
Compliance Achieved? (Yes/No)	YES - Route process off-gases through dryer combustion chamber
Method of Compliance Determination	Unspecified (References to Method 18 or Method 320)
Actions Taken for Noncompliance	NA
Baseline Emissions Rate (specify units)	Facility wide increase = 330.79 ton/yr VOC
Post-BACT Emissions Rate (specify units)	Emission Limit is 3.16 lbs/hr - average of 3 tests
Emissions Reduction Potential (%)	98%
Cost Effectiveness (\$/ton removed)	Not provided
Reference	RBLC Entry - IA-0088

Refer to Chapter B of the A New Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

Background Search - Existing BACT Determinations (continued)					
Facility:	Southwest Iowa Renewable Energy	Unit ID:	IA-0092	Pollutant:	VOC

C. SOURCE 3	
Source	Southwest Iowa Renewable Energy
City	Council Bluffs
State	IA
Regulatory Authority	Iowa Department of Natural Resources - Air Quality
Permit	New/Greenfield Facility - # 06-A-571P through 06-A-590P
Date Issued	4/19/2007 & updated 11/17/2008
Facility	Ethanol Production Facility - DDGS Dryers + Distillation
Capacity (specify units)	125,000,000 gallons ethanol production per year. Throughput 60 tons/hr
BACT Determination	BACT - PSD
Compliance Achieved? (Yes/No)	Yes - Thermal Oxidizer 18 MMBtu/hr
Method of Compliance Determination	Unspecified
Actions Taken for Noncompliance	NA
Baseline Emissions Rate (specify units)	Facility wide increase = 104.0 ton/yr VOC
Post-BACT Emissions Rate (specify units)	Emission limit is 5.1100 lb/hr - 1 Hour
Emissions Reduction Potential (%)	Required to meet 98%
Cost Effectiveness (\$/ton removed)	Not provided
Reference	RBLCL Entry - IA-0092

Refer to Chapter B of the A New Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

Background Search - Existing BACT Determinations (continued)					
Facility:	Heartland Corn Products	Unit ID:	MN-0062	Pollutant:	VOC

D. SOURCE 4	
Source	Heartland Corn Products
City	Winthrop
State	MN
Regulatory Authority	Minnesota Pollution Control Agency - Air Quality Division
Permit	Unspecified Type - Permit # 14300014-005
Date Issued	12/22/2005 & updated 3/9/2006
Facility	Ethanol Fuel Grade Plant - DDGS Dryers
Capacity (specify units)	DDGS Dryer throughput - 150 MMBtu/hr
BACT Determination	BACT - PSD
Compliance Achieved? (Yes/No)	YES - Thermal Oxidizer
Method of Compliance Determination	Unspecified
Actions Taken for Noncompliance	NA
Baseline Emissions Rate (specify units)	Facility wide increase = 184.8 ton/yr VOC
Post-BACT Emissions Rate (specify units)	Emission limit is 15.26 lb/hr
Emissions Reduction Potential (%)	Required to meet 95% control - 15.26 lb/hr
Cost Effectiveness (\$/ton removed)	Not provided
Reference	RBLC Entry - MN-0062

Refer to Chapter B of the A New Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

Background Search - Existing BACT Determinations (continued)					
Facility:	MGP Ingredients of Illinois	Unit ID:	IL-0105	Pollutant:	VOC

E. SOURCE 5	
Source	MGP Ingredients of Illinois
City	Pekin
State	IL
Regulatory Authority	Illinois EPA - Bureau of Air
Permit	Add new process (dryer for byproduct feed) to existing facility - Permit # 040600009
Date Issued	1/25/2006 & updated 1/8/2009
Facility	Fuel Ethanol and Beverage Alcohol plant -Feed Dryer D6500
Capacity (specify units)	Unspecified
BACT Determination	BACT - PSD
Compliance Achieved? (Yes/No)	Yes - Eco Dryer System or other comparable that passes exhaust through the dryer
Method of Compliance Determination	Unspecified
Actions Taken for Noncompliance	NA
Baseline Emissions Rate (specify units)	Unspecified
Post-BACT Emissions Rate (specify units)	Emission limit is 0.12 lb/MMBtu - 3 Hour Average
Emissions Reduction Potential (%)	VOM Limit may be lowered to 0.11lb/MMBtu based on demonstrated performance of the new feed dryer.
Cost Effectiveness (\$/ton removed)	Not provided
Reference	RBLC Entry IL-0105

Refer to Chapter B of the ANew Source Review (NSR) Workshop Manual@ (Draft edition, October 1990).

SUMMARY OF BEST AVAILABLE CONTROL TECHNOLOGY

List each facility subject to the BACT requirements. For each facility listed, indicate the Unit ID, Stack ID, and all pollutants that are subject to the BACT requirements. A FORM BACT-01 ANALYSIS OF BEST AVAILABLE CONTROL TECHNOLOGY should be completed for each pollutant-facility combination listed in this table.

Facilities Subject to BACT									
Facility Name	Unit ID	Stack ID	Pollutants Subject to BACT						
			PM	PM ₁₀	SO ₂	NO _x	CO	VOC	Other (please specify)
Direct-fired DDG Dryer	EU-39	S-320						X	
Baseline Project Emissions Total in tons per year (tpy):								418.8	
Post-BACT Project Emissions Total in tons per year (tpy):								8.38	

Copy page as necessary

Appendix C

Emission Estimates

ENVIRON

Table C-1
DDG Dryer Process & Combustion Emission Estimates
Criteria Pollutants
MGPI of Indiana, LLC

Combustion Source	Hourly MMBtu/hr	Annual MMBtu/yr
Direct-fired Dryer Heat Input Capacity ^(a)	45	394,200
RTO Heat Input Capacity ^(a)	8	70,080
Total Heat Input Capacity	53	464,280

Production Capacity	ton/hr	ton/yr
Short-term Distiller's Dry Grain (DDG) Production ^(b)	9.56	83,754

Control Efficiency For Criteria Emissions (% Removal) ^(c)	Pollutant	Control Efficiency
	SO ₂	0%
	VOC	98%
	CO	90%
	PM/PM ₁₀ /PM _{2.5}	98%

Emissions From DDG Drying (Proposed EU- 39)	Pollutant	NO _x		CO		SO ₂		VOC		PM		PM ₁₀		PM _{2.5}	
	Uncontrolled Emission Factor ^(c)	0.12		2.0		0.45		10.0		10.0		10.0		10.0	
	Units	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
Uncontrolled PTE ^(d)		6.36	27.9	106.0	464.3	4.30	18.8	95.61	418.8	95.61	418.8	95.61	418.8	95.61	418.8
Controlled PTE ^(d)		6.36	27.9	10.6	46.4	4.30	18.8	1.91	8.38	1.91	8.38	1.91	8.38	1.91	8.38

Conversion factor : $\frac{1}{2,000} \frac{\text{ton}}{\text{lbs}}$

Notes:

- (a) Design heat inputs of direct fired dryer and of thermal oxidizer provided by the manufacturer (ICM, Inc.).
- (b) Maximum short-term distiller's dry grain (DDG) production rate taken from the material balance provided by ICM dated 1/30/2015. Capacity of proposed system will be equivalent to combined capacity of the existing steam-tube dryers (portion of existing EU-32). Material balance is as follows:

	(lb/hr)	%solids
Dryer feed	49,122	35.0%
Water / Evaporation	30,000	0%
DDG Production	19,122	90%

Annual operations assume that the proposed dryer will operate at capacity continuously throughout the year.

- (c) Dryer uncontrolled emission factors and cyclone/thermal oxidizer control efficiencies provided by the manufacturer (ICM, Inc.). Assume PM/PM₁₀ emissions are equivalent. Under the Part 70 Permit Program particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM₁₀), is considered a "regulated pollutant". Emission factors include both process emissions from the DDG drying operations and natural gas combustion emissions occurring within the direct-fired dryer.

- (d) Methodology and Sample Calculations:

NO_x and CO:

Uncontrolled PTE (lb/hr) = [Uncontrolled Emission Factor (lb/MMBtu) x Design Firing Rate (MMBtu/hr)]

Uncontrolled PTE (ton/yr) = [Uncontrolled Emission Factor (lb/MMBtu) x Design Firing Rate (MMBtu/yr) / 2,000 lb/ton]

$$\frac{2 \text{ lb CO}}{\text{MMBtu}} \times \frac{53 \text{ MMBtu}}{\text{hr}} = 106 \frac{\text{lb CO}}{\text{hr}}$$

$$\frac{2 \text{ lb CO}}{\text{MMBtu}} \times \frac{464,280 \text{ MMBtu}}{\text{yr}} \times \frac{1 \text{ ton}}{2,000 \text{ lb}} = 464.3 \frac{\text{ton CO}}{\text{yr}}$$

Controlled PTE (lb/hr) = [Uncontrolled Emission Rate (lb/hr) x (1 - Control Efficiency)]

Controlled PTE (ton/yr) = [Uncontrolled Emission Rate (ton/yr) x (1 - Control Efficiency)]

$$\frac{106 \text{ lb CO}}{\text{hr}} \times (1 - 0.9) = 10.6 \frac{\text{lb CO}}{\text{hr}}$$

$$\frac{464.28 \text{ ton CO}}{\text{yr}} \times (1 - 0.9) = 46.4 \frac{\text{ton CO}}{\text{yr}}$$

SO₂, VOC, PM/PM₁₀/PM_{2.5}:

Uncontrolled PTE (lb/hr) = [Uncontrolled Emission Factor (lb/ton DDG) x Production Rate (ton/hr)]

Uncontrolled PTE (ton/yr) = [Uncontrolled Emission Factor (lb/ton DDG) x Production Rate (ton/yr) / 2,000 lb/ton]

$$\frac{10.0 \text{ lb VOC}}{\text{ton DDG}} \times \frac{9.6 \text{ ton}}{\text{hr}} = 95.6 \frac{\text{lb VOC}}{\text{hr}}$$

$$\frac{10.0 \text{ lb VOC}}{\text{ton DDG}} \times \frac{83754.4 \text{ ton}}{\text{yr}} \times \frac{1 \text{ ton}}{2,000 \text{ lb}} = 418.8 \frac{\text{ton VOC}}{\text{yr}}$$

Controlled PTE (lb/hr) = [Uncontrolled Emission Rate (lb/hr) x (1 - Control Efficiency)]

Controlled PTE (ton/yr) = [Uncontrolled Emission Rate (ton/yr) x (1 - Control Efficiency)]

$$\frac{95.6 \text{ lb VOC}}{\text{hr}} \times (1 - 0.98) = 1.9 \frac{\text{lb VOC}}{\text{hr}}$$

$$\frac{418.8 \text{ ton VOC}}{\text{yr}} \times (1 - 0.98) = 8.4 \frac{\text{ton VOC}}{\text{yr}}$$

Table C-2
DDG Dryer Process & Combustion Emission Estimates
Hazardous Air Pollutants
MGPI of Indiana, LLC

Combustion Source	Hourly MMBtu/hr	Annual MMBtu/yr
Direct-fired Dryer Heat Input Capacity ^(a)	45	394,200
RTO Heat Input Capacity ^(b)	8	70,080
Total Heat Input Capacity	53	464,280

Production Capacity	ton/hr	ton/yr
Short-term Distiller's Dry Grain (DDG) Production ^(b)	9.56	83,754

Control Efficiency For Criteria Emissions (% Removal) ^(c)	Pollutant	Control Efficiency
	HAP	97%

Description	Design Rate (MMBtu/hr)	Heat Content (Btu/scf)	Fuel Use (scf/hr)	Fuel Use (MMscf/year)
Direct-fired Dryer	45	1,020	44,118	386.5
Thermal Oxidizer Unit	8	1,020	7,843	68.7
Total			51,961	455.2

HAP Emissions From DDG Drying (EU-39)	Pollutant	Acetaldehyde		Formaldehyde		Acrolein		Methanol		Total HAP (from Natural Gas Combustion) ^(d)		Total HAP Emissions ^(e)		
	Uncontrolled Emission Factors ^(b)	0.5		0.31		0.01		0.11		1.81				
		lbs/ton DDGS		lbs/ton DDGS		lbs/ton DDGS		lbs/ton DDGS		lb/mm scf				
	Units	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	
Uncontrolled PTE ^(f)			4.78	20.94	2.96	12.98	0.10	0.42	1.05	4.61	0.09	0.41	8.99	39.36
Controlled PTE ^(f)			0.14	0.63	0.09	0.39	0.003	0.013	0.03	0.14	0.003	0.01	0.27	1.18

Conversion factor : $\frac{1}{2,000}$ ton
lbs

Notes:

- (a) Design heat inputs of direct fired dryer and of thermal oxidizer provided by the manufacturer (ICM, Inc.).
- (b) DDG production rates as shown in Table C-1.
- (c) Dryer uncontrolled emission factors and thermal oxidizer control efficiencies provided by the manufacturer (ICM, Inc.). Emission factors for specific HAPs include both process emissions from the DDG drying operations and natural gas combustion emissions occurring within the direct-fired dryer.
- (d) HAP emission factors from natural gas combustion are taken from AP-42, Chapter 1.4, as listed below.

Pollutant	Natural Gas Emission Factor (lbs/MMscf)
Arsenic Compounds	0.0002
Benzene (71432)	0.0021
Beryllium Compounds	0.000012
Cadmium Compounds	0.0011
Chromium Compounds	0.0014
Cobalt Compounds	0.000084
Dichlorobenzene (106467)	0.0012
Formaldehyde (50000)	
Hexane (110543)	1.8
Lead Compounds	0.0005
Manganese Compounds	0.00038
Mercury Compounds	0.00026
Naphthalene (91203)	0.00061
Nickel Compounds	0.0021
Polycyclic Organic Matter	0.0000882
Selenium Compounds	0.000024
Toluene (108883)	0.0034
Total HAPs	1.81

Included in production-based factor

- (e) Total HAP emissions are the sum of Acetaldehyde, Formaldehyde, Acrolein, and Methanol from production and natural gas combustion combined with the sum of HAP emissions from natural gas combustion only.

- (f) Methodology and Sample Calculations, HAP from production and natural gas combustion:

Uncontrolled PTE (lb/hr) = [Uncontrolled Emission Factor (lb/ton DDG) x Production Rate (ton/hr)]

Uncontrolled PTE (ton/yr) = [Uncontrolled Emission Factor (lb/ton DDG) x Production Rate (ton/yr) / 2,000 lb/ton]

$$\begin{array}{lcl} \frac{0.11 \text{ lb Methanol}}{\text{ton DDG}} \times \frac{9.56 \text{ ton}}{\text{hr}} & = & \frac{1.05 \text{ lb Methanol}}{\text{hr}} \\ \frac{0.11 \text{ lb Methanol}}{\text{ton DDG}} \times \frac{83,754 \text{ ton}}{\text{yr}} \times \frac{1 \text{ ton}}{2,000 \text{ lb}} & = & \frac{4.61 \text{ ton Methanol}}{\text{yr}} \end{array}$$

Controlled PTE (lb/hr) = [Uncontrolled Emission Rate (lb/hr) x (1 - Control Efficiency)]

Controlled PTE (ton/yr) = [Uncontrolled Emission Rate (ton/yr) x (1 - Control Efficiency)]

$$\begin{array}{lcl} \frac{1.05 \text{ lb Methanol}}{\text{hr}} \times (1 - 0.97) & = & \frac{0.03 \text{ lb Methanol}}{\text{hr}} \\ \frac{4.61 \text{ ton Methanol}}{\text{yr}} \times (1 - 0.97) & = & \frac{0.14 \text{ ton Methanol}}{\text{yr}} \end{array}$$

Methodology and Sample Calculations, HAP natural gas combustion only:

Uncontrolled emissions:

$$\begin{array}{lcl} \frac{51,961 \text{ scf}}{\text{hr}} \times \frac{1.81 \text{ lb HAP}}{\text{MMscf}} \times \frac{1 \text{ MMscf}}{10^6 \text{ scf}} & = & \frac{0.09 \text{ lb HAP}}{\text{hr}} \\ \frac{455 \text{ MMscf}}{\text{yr}} \times \frac{1.81 \text{ lb HAP}}{\text{MMscf}} \times \frac{1 \text{ ton}}{2,000 \text{ lb}} & = & \frac{0.41 \text{ ton HAP}}{\text{yr}} \end{array}$$

Controlled emissions:

$$\begin{array}{lcl} \frac{0.09 \text{ lb HAP}}{\text{hr}} \times (1 - 0.97) & = & \frac{0.003 \text{ lb HAP}}{\text{hr}} \\ \frac{0.41 \text{ ton HAP}}{\text{yr}} \times (1 - 0.97) & = & \frac{0.01 \text{ ton HAP}}{\text{yr}} \end{array}$$

Table C-3
DDG Dryer Process & Combustion Emission Estimates
Greenhouse Gases
MGPI of Indiana, LLC

Description	Design Rate (MMBTU/hr)	Heat Content (Btu/scf)	Fuel Use (scf/hr)	Hours ^(b) (hr/yr)	Fuel Use (MMscf/year)
Thermal Oxidizer Unit ^(a)	8	1,020	7,843	8,760	68.7
Direct-fired Dryer ^(a)	45	1,020	44,118	8,760	386.5
Total					455.2

GHG Emission Factors ^(c)		
CO ₂	CH ₄	N ₂ O
(lb/MMscf)	(lb/MMscf)	(lb/MMscf)
119,193	2.2	0.22

Maximum Hourly Emissions ^(d) (lb/hr)				
	CO ₂	CH ₄	N ₂ O	CO ₂ (e)
Thermal Oxidizer Unit	934.8	0.02	0.002	936
Direct-fired Dryer	5,258.5	0.10	0.010	5,264
Total GHG Emissions	--	--	--	6,200

Maximum Annual Emissions ^(d) (tons/year)				
	CO ₂	CH ₄	N ₂ O	CO ₂ (e)
Thermal Oxidizer Unit	4,095	0.08	0.01	4,099
Direct-fired Dryer	23,032	0.43	0.04	23,056
Total GHG Emissions	--	--	--	27,155

Notes:

- (a) Design heat inputs of direct fired dryer and of thermal oxidizer provided by the manufacturer (ICM, Inc.).
(b) Operating schedule based on unit operation 24 hours a day, 7 days a week, 52 weeks a year.
(c) Greenhouse gas emission factors taken from Table C-1 and Table C-2 of 40 CFR 98. CO₂e emissions are calculated by applying the global warming potential of each GHG [11/29/13 Federal GWPs, 78FR71950] to its mass emissions.

CO ₂	CH ₄	N ₂ O	Units
53.02	1.00E-03	1.00E-04	kg/MMBtu
1	25	298	Global Warming Potential

(d) Methodology and Sample calculations:

Thermal Oxidizer:

Maximum CO₂ emissions (lb/hr) = Fuel flow rate (scf/hr) x Emission Factor (lb/MMscf) x MMscf/10⁶ scf

Maximum CO₂ emissions (ton/yr) = Fuel flow rate (MMscf/yr) x Emission Factor (lb/MMscf) x ton/2,000 lb

$\frac{7,843 \text{ scf}}{\text{hr}}$	$\frac{119,193 \text{ lb}}{\text{MMscf}}$	$\frac{\text{MMscf}}{10^6 \text{ scf}}$	=	$\frac{934.85 \text{ lb CO}_2}{\text{hr}}$
$\frac{68.7 \text{ MMscf}}{\text{yr}}$	$\frac{119,193 \text{ lb}}{\text{MMscf}}$	$\frac{\text{ton}}{2,000 \text{ lb}}$	=	$\frac{4,095 \text{ ton CO}_2}{\text{yr}}$

CO₂e emissions (lb/hr) = CO₂ emissions (lb/hr) + (CH₄ emissions (lb/hr) X CH₄ GWP) + (N₂O emissions (lb/hr) X N₂O GWP)

CO₂e emissions (ton/yr) = CO₂ emissions (ton/yr) + (CH₄ emissions (ton/yr) X CH₄ GWP) + (N₂O emissions (ton/yr) X N₂O GWP)

4,095 ton/yr CO₂ + (0.08 ton/yr CH₄ x 25) + (0.01 ton/yr N₂O x 298) = 4,099 ton/yr CO₂e

Table C-4
DDG Cooler and Transport System Emission Estimates
Particulate
MGPI of Indiana, LLC

Uncontrolled Emissions Estimates														
Emission Unit	Emission Point	Description	Uncontrolled PM Emission Factor (lb/ton)	Uncontrolled PM ₁₀ Emission Factor (lb/ton)	Uncontrolled PM _{2.5} Emission Factor (lb/ton)	Source ^(a)	DDG throughput ^(c)		Uncontrolled PM Emission Rate ^(d)		Uncontrolled PM ₁₀ Emission Rate ^(d)		Uncontrolled PM _{2.5} Emission Rate ^(d)	
							(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
EU-32	Screw Conveyor	Grain Conveying	0.061	0.034	0.0058	AP-42, Table 9.9.1-1 (3/03), Headhouse and Grain Handling	9.56	83,754	0.58	2.55	0.33	1.42	0.06	0.24
	Hammer Mill	Hammer Milling ^(b)	0.793	0.484	0.182	AP-42, Table 9.9.1-2 (3/03), Animal Feed Mills, Hammermill			7.58	33.20	4.62	20.25	1.74	7.64
	Drum Cooler	Grain Conveying	0.061	0.034	0.0058	AP-42, Table 9.9.1-1 (3/03), Headhouse and Grain Handling			0.58	2.55	0.33	1.42	0.06	0.24
	Totals								8.16	35.76	4.95	21.68	1.80	7.88

Controlled Emissions Estimates														
Emission Unit	Emission Point	Description	Controlled PM Emission Factor (lb/ton)	Controlled PM ₁₀ Emission Factor (lb/ton)	Controlled PM _{2.5} Emission Factor (lb/ton)	Source ^(a)	DDG throughput ^(c)		Controlled PM Emission Rate ^(d)		Controlled PM ₁₀ Emission Rate ^(d)		Controlled PM _{2.5} Emission Rate ^(d)	
							(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
EU-32	Screw Conveyor	Grain Conveying	0.061	0.034	0.0058	AP-42, Table 9.9.1-1 (3/03), Headhouse and Grain Handling	9.56	83,754	0.58	2.55	0.33	1.42	0.06	0.24
	Hammer Mill	Hammer Milling ^(b)	0.067	0.052	0.036	AP-42, Table 9.9.1-2 (3/03), Animal Feed Mills, Hammermill			0.64	2.81	0.49	2.16	0.35	1.53
	Drum Cooler	Grain Conveying	0.061	0.034	0.0058	AP-42, Table 9.9.1-1 (3/03), Headhouse and Grain Handling			0.58	2.55	0.33	1.42	0.06	0.24
							Totals		1.81	7.91	1.14	5.01	0.46	2.01

Notes:

(a) Factors taken from AP-42, Fifth Edition, Volume 1, Section 9.9.1 (Grain Elevators and Processes).

Grain conveying factors assume no control (controlled and uncontrolled factors are equivalent). Controlled milling factor is taken from AP-42, Table 9.9.1-1, which accounts for cyclone controls in place on DDG cooling system. Uncontrolled factor for milling is calculated assuming that the cyclone achieves 85% PM control.

(b) As recommended by AP-42 Appendix B.2, Table B.2.2 for Category 7 - "Grain Processing" on Page 17, the particle size distribution for PM₁₀ is 61% of Total PM and for PM_{2.5} is 23% of Total PM for uncontrolled emissions. Additionally, AP-42 Appendix B.2, Table B.2.3 "Typical Collection Efficiencies of Various Particulate Control Devices" states that for high efficiency centrifugal collectors, the collection efficiency is 80% for PM_{2.5} and 95% for PM₁₀. The size distribution of controlled PM emissions is calculated as presented below.

PM Size Range	Uncontrolled wt%	Collection Efficiency	Controlled Wt	Controlled wt%
PM _{2.5}	23%	80%	0.046	54%
PM _{2.5} to PM ₁₀	38%	95%	0.019	22%
PM ₁₀ and higher	39%	95%	0.0195	23%
	1		0.0845	
		Overall control:	91.6%	

(c) Throughputs as listed in Table C-1.

(d) Methodology and Sample Calculations:

Uncontrolled PTE (lb/hr) = [Uncontrolled Emission Factor (lb/ton DDG) x Production Rate (ton/hr)]

Uncontrolled PTE (ton/yr) = [Uncontrolled Emission Factor (lb/ton DDG) x Production Rate (ton/yr) / 2,000 lb/ton]

Hammer Milling Emissions:

0.05 lb PM-10 ton DDG	9.561 ton hr	=	0.49 lb PM-10/hr
0.05 lb PM-10 ton DDG	83,754 ton yr	=	2.16 ton PM-10/yr

Table C-5
DDG Cooler and Transport System Emission Estimates
Volatile Organic Compounds & Hazardous Air Pollutants
MGPI of Indiana, LLC

Emission Unit	Emission Point	Description	Uncontrolled Emission Factors ^(a)		0.219 lb/ton DDG		0.016 lbs/ton DDG		0.00033 lbs/ton DDG		0.010 lbs/ton DDG		0.0036 lbs/ton DDG		Total HAP Emissions	
			DDG throughput ^(b)		VOC ^(c)		Acetaldehyde ^(c)		Acrolein ^(c)		Formaldehyde ^(c)		Methanol ^(c)			
			(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
EU-32	Drum Cooler	Cooling Drum Apparatus	9.56	83,754	2.09	9.16	0.16	0.69	0.0031	0.014	0.10	0.43	0.034	0.15	0.292	1.28
	Existing Screw Conveyor	Grain Conveying														
	Existing Hammer Mill and Cyclone	Hammer Milling														

Notes:

(a) VOC emission factor for DDG cooling taken from a similar operation permitted in Indiana under Permit #T169-31191-00068 (POET Biorefining - North Manchester). HAP emission factors are derived as a percentage of the VOC emission factor presented, assuming that individual HAPs are emitted in the same proportion from cooling as from the drying emissions provided in Table C-1.

(b) DDG throughputs as provided in Table C-1.

(c) Methodology and Sample Calculations:

Emission rate (lb/hr) = DDG Throughput (ton/hr) X DDG Cooling Emission factor (lb/ton)

Emission rate (ton/yr) = DDG Throughput (ton/yr) X DDG Cooling Emission factor (lb/ton) x ton/2,000 lb

$$\frac{9.561 \text{ ton DDG}}{\text{hr}} \times \frac{0.219 \text{ lb VOC}}{\text{ton DDG}} = 2.09 \frac{\text{lb VOC}}{\text{hr}}$$

$$\frac{83,754 \text{ ton DDG}}{\text{yr}} \times \frac{0.219 \text{ lb VOC}}{\text{ton DDG}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 9.16 \frac{\text{ton VOC}}{\text{yr}}$$

Table C-6
Wet Cake Emission Estimates
MGPI of Indiana, LLC

Emission Unit	Emission Point ^(a)	Uncontrolled Emission Factors ^(b)		0.0083 lb/ton wet cake		0.0001 lb/ton wet cake		0.00002 lb/ton wet cake		0.0002 lb/ton wet cake		0.00004 lb/ton wet cake		Total HAP Emissions	
		Dryer Feed ^(c)		VOC ^(d)		Acetaldehyde ^(d)		Acrolein ^(d)		Formaldehyde ^(d)		Methanol ^(d)			
		(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Proposed EU-40	Wet Cake Production, Storage, and Loadout	24.56	12,281	0.20	0.05	0.002	0.0006	0.0005	0.0001	0.005	0.001	0.001	0.0002	0.009	0.0022

Notes:

- (a) VOC and HAP emissions can result during periods of dryer start-up and shutdown, when the dryer throughput may be diverted to a wet pad so that wet feed is not sent to dry storage.
(b) Emission factor for wet cake taken from a similar operation permitted in Indiana under Permit #T095-30443-00127 (POET Biorefining - Alexandria).
(c) Hourly dryer feed is maximum as taken from the material balance provided by ICM dated 1/30/2015. Annual feed assumes that wet cake production is limited to 500 hr/yr.
(d) Methodology and Sample Calculations:

Emission rate (lb/hr) = Dryer Feed (ton/hr) X Wet Cake Emission factor (lb/ton)

Emission rate (ton/yr) = Dryer Feed (ton/yr) X Wet Cake Emission factor (lb/ton) x ton/2,000 lb

$$\frac{24.56 \text{ ton wet cake}}{\text{hr}} \times \frac{0.0083 \text{ lb VOC}}{\text{ton wet cake}} = \frac{0.20 \text{ lb VOC}}{\text{hr}}$$

$$\frac{12,281 \text{ ton wet cake}}{\text{yr}} \times \frac{0.008 \text{ lb VOC}}{\text{ton wet cake}} \times \frac{\text{ton}}{2,000 \text{ lb}} = \frac{0.05 \text{ ton VOC}}{\text{yr}}$$

Table C-7a
Potential to Emit (PTE) From Existing Steam Tube Dryer System
Proposed DDG Dryer Project
MGPI of Indiana, LLC

EU-32 Steam Tube Rotary Dryers, Cooler and Transport System

PM, PM₁₀, PM_{2.5} Emissions

Constituent	Dryer Feed Rate ^(a) (ton/yr)	Controlled Emission Factor ^(b) (lb/ton)	Controlled Emissions ^(c) (ton/yr)	Uncontrolled Emissions ^(d) (ton/yr)
PM	215,154	0.27	29.0	193.6
PM10		0.27	29.0	193.6
PM2.5		0.27	29.0	193.6

Notes:

- (a) Feed (wet cake) into existing steam tube dryer system is taken from the material balance provided by ICM dated 1/30/2015. Capacity of existing system and proposed system are equivalent.
- (b) Controlled emission Factor from AP-42, Table 9.9.7-1. The emission estimation methodology used matches that provided in the IDEM document "Addendum to the Technical Support Document (ATSD) for a Part 70 Operating Permit Renewal", Appendix A Emission Calculations, dated May 22, 2014, for permit T029-32119-00005.
- (c) Methodology and Sample Calculations:
Controlled Emissions (ton/yr) = Usage (ton/yr) x EF (lb/ton) / 2,000 lb/ton
PM_{2.5} emissions conservatively assumed to be equal to PM₁₀ emissions.

215,154 ton	0.27 lb PM	ton	=	29.0 ton PM
yr	ton	2,000 lb		yr

- (d) Uncontrolled emissions estimated based on an 85% control efficiency for controlled emissions.
PM_{2.5} emissions conservatively assumed to be equal to PM₁₀ emissions.

VOC Emissions

Dryer Feed Rate ^(a) (ton/hr)	Water Content ^(b) (%) by wt	VOC Content of Water ^(b) (lb VOC/lb water)	VOC from Dryers (ton/yr)
215,154	66.66%	0.006	860.5

Notes:

- (a) Feed (wet cake) into existing steam tube dryer system is taken from the material balance provided by ICM dated 1/30/2015. Capacity of existing system and proposed system are equivalent.
- (b) Water content (% wt) and VOC content of water (lb VOC/lb water) taken from May 22, 2014 ATSD, Appendix A, Page 8 of 23, for permit T029-32119-00005.
- (c) Methodology and Sample Calculations:
VOC (ton/yr) = Dryer Feed Rate (ton/yr) x Water Content of Feed (% by wt) x (lb VOC/lb water)

215,154 ton	66.66 % wt	0.006 lb VOC	=	860.5 ton VOC
yr	ton	lb water		yr

HAP Emissions

HAP	HAP% ^(a) (by wt of VOC)	HAP from Dryers (ton/yr)
Acetaldehyde	6.18%	53.2
Acrolein	0.37%	3.2
Methanol	1.24%	10.7
Formaldehyde	0.04%	0.3
Total		67.4

Notes:

- (a) HAP composition taken from May 22, 2014 ATSD, Appendix A, Page 8 of 23, for permit T029-32119-00005.

Table C-7b
Emissions From Existing Steam Tube Dryer System - as Backup
Proposed DDG Dryer Project
MGPI of Indiana, LLC

EU-32 Steam Tube Rotary Dryers, Cooler and Transport System

PM, PM₁₀, PM_{2.5} Emissions

Constituent	Dryer Feed Rate ^(a) (ton/yr)	Controlled Emission Factor ^(b) (lb/ton)	Controlled Emissions ^(c) (ton/yr)	Uncontrolled Emissions ^(d) (ton/yr)
PM	147,000	0.27	19.8	132.3
PM10		0.27	19.8	132.3
PM2.5		0.27	19.8	132.3

Notes:

- (a) Feed (wet cake) into existing steam tube dryer system is based on operation as back-up to the proposed direct-fired dryer. MGPI proposes to limit the throughput of the steam tube dryers since the units will operate as back-up to the proposed new direct-fired unit.
- (b) Controlled emission Factor from AP-42, Table 9.9.7-1. The emission estimation methodology used matches that provided in the IDEM document "Addendum to the Technical Support Document (ATSD) for a Part 70 Operating Permit Renewal", Appendix A Emission Calculations, dated May 22, 2014, for permit T029-32119-00005.
- (c) Methodology and Sample Calculations:
Controlled Emissions (ton/yr) = Usage (ton/yr) x EF (lb/ton) / 2,000 lb/ton
PM_{2.5} emissions conservatively assumed to be equal to PM₁₀ emissions.

$$\frac{147,000 \text{ ton}}{\text{yr}} \times \frac{0.27 \text{ lb PM}}{\text{ton}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 19.8 \frac{\text{ton PM}}{\text{yr}}$$

- (d) Uncontrolled emissions estimated based on an 85% control efficiency for controlled emissions.
PM_{2.5} emissions conservatively assumed to be equal to PM₁₀ emissions.

VOC Emissions

Dryer Feed Rate (ton/hr)	Water Content ^(b) (%) by wt)	VOC Content of Water ^(b) (lb VOC/lb water)	VOC from Dryers (ton/yr)
147,000	66.66%	0.006	587.9

Notes:

- (a) Feed (wet cake) into existing steam tube dryer system is based on operation as back-up to the proposed direct-fired dryer.
- (b) Water content (% wt) and VOC content of water (lb VOC/lb water) taken from May 22, 2014 ATSD, Appendix A, Page 8 of 23, for permit T029-32119-00005.
- (c) Methodology and Sample Calculations:
VOC (ton/yr) = Dryer Feed Rate (ton/yr) x Water Content of Feed (% by wt) x (lb VOC/lb water)

$$\frac{147,000 \text{ ton}}{\text{yr}} \times \frac{66.66 \% \text{ wt}}{\text{ton}} \times \frac{0.006 \text{ lb VOC}}{\text{lb water}} = 587.9 \frac{\text{ton VOC}}{\text{yr}}$$

HAP Emissions

HAP	HAP% ^(a) (by wt of VOC)	HAP from Dryers (ton/yr)
Acetaldehyde	6.18%	36.3
Acrolein	0.37%	2.2
Methanol	1.24%	7.3
Formaldehyde	0.04%	0.2
Total		46.0

Notes:

- (a) HAP composition taken from May 22, 2014 ATSD, Appendix A, Page 8 of 23, for permit T029-32119-00005.

Appendix D

PSD/NNSR Applicability

Table D-1
Project-Related PM Emission Changes
Proposed DDG Dryer Project
MGPI of Indiana, LLC

Source	Baseline or Past Actual Emissions (tpy) ^(a)	Post-Project Emissions (tpy) ^(b)	Project-Related Emissions Increase/Decrease (tpy) ^(c)
Proposed direct-fired DDG dryer (Proposed EU-39)	0	8.38	8.38
DDG Cooler and Transport System (portion of EU-32)	0	7.91	7.91
Existing Steam Tube Dryers (portion of EU-32) as back-up ^(d)	21.45	19.85	-1.61
Project-Related Increases:			16.29
Significance Threshold:			25
Significant Emissions Increase?			NO

Notes:

- Past actual emissions for the proposed direct-fired DDG dryer are zero since the unit will be newly constructed. The existing DDG cooler and transport system (portion of EU-32) will continue to be used downstream of the direct-fired DDG dryer. However, emissions from these operations have not historically been separately quantified from existing steam tube dryer emissions. Therefore the cooler and transport baseline emissions are conservatively set to zero as well.
- See Table C-1 for post-project emission rates from the proposed direct-fired DDG Dryer. See Table C-4 for post-project emission rates from the Cooler and Transport System.
- Project-Related Emissions Increase/Decrease = Future Projected Actual or Permitted Emissions - Past Actual Emissions
- The existing steam tube DDG dryers (portion of EU-32) will be converted to use as a back-up system for the proposed direct-fired DDG dryer, but will not be otherwise modified. For the purpose of this PSD/NNSR applicability analysis, the existing steam-tube DDG drying is considered project-affected. Post-project emissions are provided in Table C-7b and baseline emissions are provided in Table D-8.

Contemporaneous Emission Changes - Netting Analysis

Project Name/Description	Actual Emissions Before the Change (tpy)	Potential Emissions After the Change (tpy)	Change (Increase or Decrease) (tpy)	Creditable Increase or Decrease (tpy)
Proposed Project Increases	0	16.29	16.29	16.29
Proposed Project Decreases^(e)	21.45	19.85	-1.61	-1.61
Creditable Contemporaneous Increases/Decreases^(f,g)				
Permit 029-32386-00005 (12/17/12)	-		0.10	0.10
Total Contemporaneous Net Emissions Change				14.78
Significance Threshold:				25
Significant Net Emissions Increase?				NO

- Project related emission decreases are associated with the conversion of the existing steam tube Dryers (included with existing EU-32 to "backup status"). See calculations presented in Table D-8.
- The Creditable Contemporaneous Increases/Decreases were determined based on historical projects conducted at MGP of Indiana's Lawrenceburg, IN over the preceding 5 year period.
- The historical projects conducted at MGPI's Lawrenceburg, IN facility over the preceding 5-year period include the following:
 - Permit # 029-32119-00005 - Administrative Amendment issued 5-31-2013 for construction and operation of eight (8) external storage tanks(60,000-gallons each) near the Regauge Process Area. Changes categorized as an insignificant activity and Total PTE from proposed modification was 2.1 tpy VOCs with no other emissions of PSD pollutants.
 - Permit # 029-32386-00005 - Administrative Amendment issued 12-17-2012 for construction and operation of three (3) natural gas-fired boilers with a heat capacity of 4.2 MMBTU/hr each. Project emission increases were 0.10 tpy PM; 0.41 tpy PM10; 0.41 tpy PM2.5; 0.03 tpy SO2; 4.54 tpy CO; 0.30 tpy VOC; 5.41 tpy NOx and 6,532 tpy GHGs.

Table D-2
Project-Related PM₁₀ Emission Changes
Proposed DDG Dryer Project
MGPI of Indiana, LLC

Source	Baseline or Past Actual Emissions (tpy) ^(a)	Post-Project Emissions (tpy) ^(b)	Project-Related Emissions Increase/Decrease (tpy) ^(c)
Proposed direct-fired DDG dryer (Proposed EU-39)	0	8.38	8.38
DDG Cooler and Transport System (portion of EU-32)	0	5.01	5.01
Existing Steam Tube Dryers (portion of EU-32) as back-up ^(d)	21.45	19.85	-1.61
Project-Related Increases:			13.38
Significance Threshold:			15
Significant Emissions Increase?			NO

Notes:

- (a) Past actual emissions for the proposed direct-fired DDG dryer are zero since the unit will be newly constructed. The existing DDG cooler and transport system (portion of EU-32) will continue to be used downstream of the direct-fired DDG dryer. However, emissions from these operations have not historically been separately quantified from existing steam tube dryer emissions. Therefore the cooler and transport baseline emissions are conservatively set to zero as well.
- (b) See Table C-1 for post-project emission rates from the proposed direct-fired DDG Dryer. See Table C-4 for post-project emission rates from the Cooler and Transport System.
- (c) Project-Related Emissions Increase/Decrease = Future Projected Actual or Permitted Emissions - Past Actual Emissions
- (d) The existing steam tube DDG dryers (portion of EU-32) will be converted to use as a back-up system for the proposed direct-fired DDG dryer, but will not be otherwise modified. For the purpose of this PSD/NNSR applicability analysis, the existing steam-tube DDG drying is considered project-affected. Post-project emissions are provided in Table C-7b and baseline emissions are provided in Table D-8.

Contemporaneous Emission Changes - Netting Analysis

Project Name/Description	Actual Emissions Before the Change (tpy)	Potential Emissions After the Change (tpy)	Change (Increase or Decrease) (tpy)	Creditable Increase or Decrease (tpy)
Proposed Project Increases	0	13.38	13.38	13.38
Proposed Project Decreases ^(e)	21.45	19.85	-1.61	-1.61
Creditable Contemporaneous Increases/Decreases ^(f,g)				
Permit 029-32386-00005 (12/17/12)	-		0.41	0.41
Total Contemporaneous Net Emissions Change				12.19
Significance Threshold:				15
Significant Net Emissions Increase?				NO

- (e) Project related emission decreases are associated with the conversion of the existing steam tube Dryers (included with existing EU-32 to "backup status"). See calculations presented in Table D-8.
- (f) The Creditable Contemporaneous Increases/Decreases were determined based on historical projects conducted at MGP of Indiana's Lawrenceburg, IN over the preceding 5 year period.
- (g) The historical projects conducted at MGPI's Lawrenceburg, IN facility over the preceding 5-year period include the following:
- Permit # 029-32119-00005 - Administrative Amendment issued 5-31-2013 for construction and operation of eight (8) external storage tanks(60,000-gallons each) near the Regauge Process Area. Changes categorized as an insignificant activity and Total PTE from proposed modification was 2.1 tpy for VOCs. All other emissions are zero.
 - Permit # 029-32386-00005 - Administrative Amendment issued 12-17-2012 for construction and operation of three (3) natural gas-fired boilers with a heat capacity of 4.2 MMBTU/hr each. New total emissions from the modification were listed as 0.10 for PM; 0.41 for PM₁₀; 0.41 for PM_{2.5}; 0.03 for SO₂; 4.54 for CO; 0.30 for VOC; 5.41 for NO_x and 6,532 for GHGs. All new emissions were below respective significance levels.

Table D-3
Project-Related PM_{2.5} Emission Changes
Proposed DDG Dryer Project
MGPI of Indiana, LLC

Source	Baseline or Past Actual Emissions (tpy) ^(a)	Post-Project Emissions (tpy) ^(b)	Project-Related Emissions Increase/Decrease (tpy) ^(c)
Proposed direct-fired DDG dryer (Proposed EU-39)	0	8.38	8.38
DDG Cooler and Transport System (portion of EU-32)	0	2.01	2.01
Existing Steam Tube Dryers (portion of EU-32) as back-up ^(d)	21.45	19.85	-1.61
Project-Related Increases:			10.39
Significance Threshold:			10
Significant Emissions Increase?			YES

Notes:

- (a) Past actual emissions for the proposed direct-fired DDG dryer are zero since the unit will be newly constructed. The existing DDG cooler and transport system (portion of EU-32) will continue to be used downstream of the direct-fired DDG dryer. However, emissions from these operations have not historically been separately quantified from existing steam tube dryer emissions. Therefore the cooler and transport baseline emissions are conservatively set to zero as well.
- (b) See Table C-1 for post-project emission rates from the proposed direct-fired DDG Dryer. See Table C-4 for post-project emission rates from the Cooler and Transport System.
- (c) Project-Related Emissions Increase/Decrease = Future Projected Actual or Permitted Emissions - Past Actual Emissions
- (d) The existing steam tube DDG dryers (portion of EU-32) will be converted to use as a back-up system for the proposed direct-fired DDG dryer, but will not be otherwise modified. For the purpose of this PSD/NNSR applicability analysis, the existing steam-tube DDG drying is considered project-affected. Post-project emissions are provided in Table C-7b and baseline emissions are provided in Table D-8.

Contemporaneous Emission Changes - Netting Analysis

Project Name/Description	Actual Emissions Before the Change (tpy)	Potential Emissions After the Change (tpy)	Change (Increase or Decrease) (tpy)	Creditable Increase or Decrease (tpy)
Proposed Project Increases	0	10.39	10.39	10.39
Proposed Project Decreases ^(e)	21.45	19.85	-1.61	-1.61
Creditable Contemporaneous Increases/Decreases ^(f,g)				
Permit 029-32386-00005 (12/17/12)	-		0.41	0.41
Total Contemporaneous Net Emissions Change				9.19
Significance Threshold:				10
Significant Net Emissions Increase?				NO

- (e) Project related emission decreases are associated with the conversion of the existing steam tube Dryers (included with existing EU 32 to "backup status"). See calculations presented in Table D-8.
- (f) The Creditable Contemporaneous Increases/Decreases were determined based on historical projects conducted at MGP of Indiana's Lawrenceburg, IN over the preceding 5 year period.
- (g) The historical projects conducted at MGPI's Lawrenceburg, IN facility over the preceding 5-year period include the following:
- Permit # 029-32119-00005 - Administrative Amendment issued 5-31-2013 for construction and operation of eight (8) external storage tanks(60,000-gallons each) near the Regauge Process Area. Changes categorized as an insignificant activity and Total PTE from proposed modification was 2.1 tpy for VOCs. All other emissions are zero.
 - Permit # 029-32386-00005 - Administrative Amendment issued 12-17-2012 for construction and operation of three (3) natural gas-fired boilers with a heat capacity of 4.2 MMBTU/hr each. New total emissions from the modification were listed as 0.10 for PM; 0.41 for PM10; 0.41 for PM2.5; 0.03 for SO2; 4.54 for CO; 0.30 for VOC; 5.41 for NOx and 6,532 for GHGs. All new emissions were below respective significance levels.

Table D-4
Project-Related VOC Emission Changes
Proposed DDG Dryer Project
MGPI of Indiana, LLC

Source	Baseline or Past Actual Emissions (tpy) ^(a)	Post-Project Emissions (tpy) ^(b)	Project-Related Emissions Increase/Decrease (tpy) ^(c)
Proposed direct-fired DDG dryer (Proposed EU-39)	0	8.38	8.38
DDG Cooler and Transport System (portion of EU-32)	0	9.16	9.16
Wet Cake Production, Storage, and Loadout (Proposed EU-40)	0	0.05	0.05
Existing Steam Tube Dryers (portion of EU-32) as back-up ^(d)	635.51	587.94	-47.57
Project-Related Increases:			17.58
Significance Threshold:			40
Significant Emissions Increase?			NO

Notes:

- (a) Past actual emissions for the proposed direct-fired DDG dryer are zero since the unit will be newly constructed. The existing DDG cooler and transport system (portion of EU-32) will continue to be used downstream of the direct-fired DDG dryer. However, emissions from these operations have not historically been separately quantified from existing steam tube dryer emissions. Therefore the cooler and transport baseline emissions are conservatively set to zero as well.
- (b) See Table C-1 for post-project emission rates from the proposed direct-fired DDG Dryer. See Table C-5 for post-project emission rates from the Cooler and Transport System. See Table C-6 for post-project emission rates from proposed wet cake production/storage.
- (c) Project-Related Emissions Increase/Decrease = Future Projected Actual or Permitted Emissions - Past Actual Emissions
- (d) The existing steam tube DDG dryers (portion of EU-32) will be converted to use as a back-up system for the proposed direct-fired DDG dryer, but will not be otherwise modified. For the purpose of this PSD/NNSR applicability analysis, the existing steam-tube DDG drying is considered project-affected. Post-project emissions are provided in Table C-7b and baseline emissions are provided in Table D-8.

Contemporaneous Emission Changes - Netting Analysis

Project Name/Description	Actual Emissions Before the Change (tpy)	Potential Emissions After the Change (tpy)	Change (Increase or Decrease) (tpy)	Creditable Increase or Decrease (tpy)
Proposed Project Increases	0	17.58	17.58	17.58
Proposed Project Decreases^(e)	635.51	587.94	-47.57	-47.57
Creditable Contemporaneous Increases/Decreases^(f,g)				
Permit 029-32119-00005 (5/31/13)	-	-	2.10	2.10
Permit 029-32386-00005 (12/17/12)	-	-	0.30	0.30
Total Contemporaneous Net Emissions Change				-27.59
Significance Threshold:				40
Significant Net Emissions Increase?				NO

- (e) Project related emission decreases are associated with the conversion of the existing steam tube Dryers (included with existing EU-32 to "backup status"). See calculations presented in Table D-8.
- (f) The Creditable Contemporaneous Increases/Decreases were determined based on historical projects conducted at MGP of Indiana's Lawrenceburg, IN over the preceding 5 year period.
- (g) The historical projects conducted at MGPI's Lawrenceburg, IN facility over the preceding 5-year period include the following:
- Permit # 029-32119-00005 - Administrative Amendment issued 5-31-2013 for construction and operation of eight (8) external storage tanks(60,000-gallons each) near the Regauge Process Area. Changes categorized as an insignificant activity and Total PTE from proposed modification was 2.1 tpy for VOCs. All other emissions are zero.
 - Permit # 029-32386-00005 - Administrative Amendment issued 12-17-2012 for construction and operation of three (3) natural gas-fired boilers with a heat capacity of 4.2 MMBTU/hr each. New total emissions from the modification were listed as 0.10 for PM; 0.41 for PM10; 0.41 for PM2.5; 0.03 for SO₂; 4.54 for CO; 0.30 for VOC; 5.41 for NO_x and 6,532 for GHGs. All new emissions were below respective significance levels.

Table D-5
Project-Related SO₂ Emission Changes
Proposed DDG Dryer Project
MGPI of Indiana, LLC

Source	Baseline or Past Actual Emissions (tpy) ^(a)	Post-Project Emissions (tpy) ^(b)	Project-Related Emissions Increase/Decrease (tpy) ^(c)
Proposed direct-fired DDG dryer (Proposed EU-39)	0	18.8	18.8
DDG Cooler and Transport System (portion of EU-32)	0	0	0
Existing Steam Tube Dryers (portion of EU-32) as back-up ^(d)	0	0	0
Project-Related Increases:			18.8
Significance Threshold:			40
Significant Emissions Increase?			NO

Notes:

- (a) Past actual emissions for the proposed direct-fired DDG dryer are zero since the unit will be newly constructed. The existing DDG cooler and transport system (portion of EU-32) will continue to be used downstream of the direct-fired DDG dryer. However, emissions from these operations have not historically been separately quantified from existing steam tube dryer emissions. Therefore the cooler and transport baseline emissions are conservatively set to zero as well.
- (b) See Table C-1 for post-project emission rates from the proposed direct-fired DDG Dryer. See Table C-4 for post-project emission rates from the Cooler and Transport System.
- (c) Project-Related Emissions Increase/Decrease = Future Projected Actual or Permitted Emissions - Past Actual Emissions
- (d) The existing steam tube DDG dryers (portion of EU-32) will be converted to use as a back-up system for the proposed direct-fired DDG dryer, but will not be otherwise modified. For the purpose of this PSD/NNSR applicability analysis, the existing steam-tube DDG drying is considered project-affected. Post-project emissions are provided in Table C-7b and baseline emissions are provided in Table D-8.

Contemporaneous Emission Changes - Netting Analysis

Project Name/Description	Actual Emissions Before the Change (tpy)	Potential Emissions After the Change (tpy)	Change (Increase or Decrease) (tpy)	Creditable Increase or Decrease (tpy)
Proposed Project Increases	0	18.84	18.84	18.84
Proposed Project Decreases ^(e)	0	0	0	0
Creditable Contemporaneous Increases/Decreases ^(f,g)				
Permit 029-32386-00005 (12/17/12)	-		0.03	0.03
Total Contemporaneous Net Emissions Change				18.87
Significance Threshold:				40
Significant Net Emissions Increase?				NO

- (e) Project related emission decreases are associated with the conversion of the existing steam tube Dryers (included with existing EU-32 to "backup status"). See calculations presented in Table D-8.
- (f) The Creditable Contemporaneous Increases/Decreases were determined based on historical projects conducted at MGP of Indiana's Lawrenceburg, IN over the preceding 5 year period.
- (g) The historical projects conducted at MGP's Lawrenceburg, IN facility over the preceding 5-year period include the following:
- Permit # 029-32119-00005 - Administrative Amendment issued 5-31-2013 for construction and operation of eight (8) external storage tanks(60,000-gallons each) near the Regauge Process Area. Changes categorized as an insignificant activity and Total PTE from proposed modification was 2.1 tpy for VOCs. All other emissions are zero.
 - Permit # 029-32386-00005 - Administrative Amendment issued 12-17-2012 for construction and operation of three (3) natural gas-fired boilers with a heat capacity of 4.2 MMBTU/hr each. New total emissions from the modification were listed as 0.10 for PM; 0.41 for PM10; 0.41 for PM2.5; 0.03 for SO₂; 4.54 for CO; 0.30 for VOC; 5.41 for NO_x and 6,532 for GHGs. All new emissions were below respective significance levels.

Table D-6
Project-Related NO_x Emission Changes
Proposed DDG Dryer Project
MGPI of Indiana, LLC

Source	Baseline or Past Actual Emissions (tpy) ^(a)	Post-Project Emissions (tpy) ^(b)	Project-Related Emissions Increase/Decrease (tpy) ^(c)
Proposed direct-fired DDG dryer (Proposed EU-39)	0	27.9	27.9
DDG Cooler and Transport System (portion of EU-32)	0	0	0
Existing Steam Tube Dryers (portion of EU-32) as back-up ^(d)	0	0	0
Project-Related Increases:			27.9
Significance Threshold:			40
Significant Emissions Increase?			NO

Notes:

- (a) Past actual emissions for the proposed direct-fired DDG dryer are zero since the unit will be newly constructed. The existing DDG cooler and transport system (portion of EU-32) will continue to be used downstream of the direct-fired DDG dryer. However, emissions from these operations have not historically been separately quantified from existing steam tube dryer emissions. Therefore the cooler and transport baseline emissions are conservatively set to zero as well.
- (b) See Table C-1 for post-project emission rates from the proposed direct-fired DDG Dryer. See Table C-4 for post-project emission rates from the Cooler and Transport System.
- (c) Project-Related Emissions Increase/Decrease = Future Projected Actual or Permitted Emissions - Past Actual Emissions
- (d) The existing steam tube DDG dryers (portion of EU-32) will be converted to use as a back-up system for the proposed direct-fired DDG dryer, but will not be otherwise modified. For the purpose of this PSD/NNSR applicability analysis, the existing steam-tube DDG drying is considered project-affected. Post-project emissions are provided in Table C-7b and baseline emissions are provided in Table D-8.

Contemporaneous Emission Changes - Netting Analysis

Project Name/Description	Actual Emissions Before the Change (tpy)	Potential Emissions After the Change (tpy)	Change (Increase or Decrease) (tpy)	Creditable Increase or Decrease (tpy)
Proposed Project Increases	0	27.86	27.86	27.86
Proposed Project Decreases ^(e)	0	0	0	0
Creditable Contemporaneous Increases/Decreases ^(f,g)				
Permit 029-32386-00005 (12/17/12)	-		5.41	5.41
Total Contemporaneous Net Emissions Change				33.27
Significance Threshold:				40
Significant Net Emissions Increase?				NO

- (e) Project related emission decreases are associated with the conversion of the existing steam tube Dryers (included with existing EU 32 to "backup status"). See calculations presented in Table D-8.
- (f) The Creditable Contemporaneous Increases/Decreases were determined based on historical projects conducted at MGP of Indiana's Lawrenceburg, IN over the preceding 5 year period.
- (g) The historical projects conducted at MGPI's Lawrenceburg, IN facility over the preceding 5-year period include the following:
- Permit # 029-32119-00005 - Administrative Amendment issued 5-31-2013 for construction and operation of eight (8) external storage tanks(60,000-gallons each) near the Regauge Process Area. Changes categorized as an insignificant activity and Total PTE from proposed modification was 2.1 tpy for VOCs. All other emissions are zero.
 - Permit # 029-32386-00005 - Administrative Amendment issued 12-17-2012 for construction and operation of three (3) natural gas-fired boilers with a heat capacity of 4.2 MMBTU/hr each. New total emissions from the modification were listed as 0.10 for PM; 0.41 for PM10; 0.41 for PM2.5; 0.03 for SO₂; 4.54 for CO; 0.30 for VOC; 5.41 for NO_x and 6,532 for GHGs. All new emissions were below respective significance levels.

Table D-7
Project-Related CO Emission Changes
Proposed DDG Dryer Project
MGPI of Indiana, LLC

Source	Baseline or Past Actual Emissions (tpy) ^(a)	Post-Project Emissions (tpy) ^(b)	Project-Related Emissions Increase/Decrease (tpy) ^(c)
Proposed direct-fired DDG dryer (Proposed EU-39)	0	46.4	46.4
DDG Cooler and Transport System (portion of EU-32)	0	0	0
Existing Steam Tube Dryers (portion of EU-32) as back-up ^(d)	0	0	0
Project-Related Increases:			46.4
Significance Threshold:			100
Significant Emissions Increase?			NO

Notes:

- (a) Past actual emissions for the proposed direct-fired DDG dryer are zero since the unit will be newly constructed. The existing DDG cooler and transport system (portion of EU-32) will continue to be used downstream of the direct-fired DDG dryer. However, emissions from these operations have not historically been separately quantified from existing steam tube dryer emissions. Therefore the cooler and transport baseline emissions are conservatively set to zero as well.
- (b) See Table C-1 for post-project emission rates from the proposed direct-fired DDG Dryer. See Table C-4 for post-project emission rates from the Cooler and Transport System.
- (c) Project-Related Emissions Increase/Decrease = Future Projected Actual or Permitted Emissions - Past Actual Emissions
- (d) The existing steam tube DDG dryers (portion of EU-32) will be converted to use as a back-up system for the proposed direct-fired DDG dryer, but will not be otherwise modified. For the purpose of this PSD/NNSR applicability analysis, the existing steam-tube DDG drying is considered project-affected. Post-project emissions are provided in Table C-7b and baseline emissions are provided in Table D-8.

Contemporaneous Emission Changes - Netting Analysis

Project Name/Description	Actual Emissions Before the Change (tpy)	Potential Emissions After the Change (tpy)	Change (Increase or Decrease) (tpy)	Creditable Increase or Decrease (tpy)
Proposed Project Increases	0	46.43	46.43	46.43
Proposed Project Decreases ^(e)	0	0	0	0
Creditable Contemporaneous Increases/Decreases ^(f,g)				
Permit 029-32386-00005 (12/17/12)	-		4.54	4.54
Total Contemporaneous Net Emissions Change				50.97
Significance Threshold:				100
Significant Net Emissions Increase?				NO

- (e) Project related emission decreases are associated with the conversion of the existing steam tube Dryers (included with existing EU-32 to "backup status"). See calculations presented in Table D-8.
- (f) The Creditable Contemporaneous Increases/Decreases were determined based on historical projects conducted at MGP of Indiana's Lawrenceburg, IN over the preceding 5 year period.
- (g) The historical projects conducted at MGPI's Lawrenceburg, IN facility over the preceding 5-year period include the following:
- Permit # 029-32119-00005 - Administrative Amendment issued 5-31-2013 for construction and operation of eight (8) external storage tanks (60,000-gallons each) near the Regauge Process Area. Changes categorized as an insignificant activity and Total PTE from proposed modification was 2.1 tpy for VOCs. All other emissions are zero.
 - Permit # 029-32386-00005 - Administrative Amendment issued 12-17-2012 for construction and operation of three (3) natural gas-fired boilers with a heat capacity of 4.2 MMBTU/hr each. New total emissions from the modification were listed as 0.10 for PM; 0.41 for PM10; 0.41 for PM2.5; 0.03 for SO2; 4.54 for CO; 0.30 for VOC; 5.41 for NOx and 6,532 for GHGs. All new emissions were below respective significance levels.

Table D-8
Past Actual Emissions From Existing Steam-tube Dryer System
Proposed DDG Dryer Project
MGPI of Indiana, LLC

EU-32 Rotary Dryers, Cooler and Transport System

PM, PM₁₀, PM_{2.5} Emissions

Constituent	Dryer Feed Rate ^(a) (ton/yr)	Controlled Emission Factor ^(b) (lb/ton)	Controlled Emissions ^(c) (ton/yr)
PM	158,894	0.27	21.5
PM10		0.27	21.5
PM2.5		0.27	21.5

Notes:

- (a) Feed (wet cake) into existing steam tube dryer system is taken from facility record
- (b) Controlled emission Factor from AP-42, Table 9.9.7-1. The emission estimation methodology used matches that provided in the IDEM document "Addendum to the Technical Support Document (ATSD) for a Part 70 Operating Permit Renewal", Appendix A Emission Calculations, dated May 22, 2014, for permit T029-32119-00005.
- (c) Methodology and Sample Calculations:
Controlled Emissions (ton/yr) = Usage (ton/yr) x EF (lb/ton) / 2,000 lb/ton
PM2.5 emissions conservatively assumed to be equal to PM10 emissions.

$$\frac{158,894 \text{ ton}}{\text{yr}} \times \frac{0.27 \text{ lb PM}}{\text{ton}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 21.5 \frac{\text{ton PM}}{\text{yr}}$$

VOC Emissions

Dryer Feed Rate (ton/yr)	Water Content ^(b) (% by wt)	VOC Content of Water ^(b) (lb VOC/lb water)	VOC from Dryers (ton/yr)
158,894	66.66%	0.006	635.5

Notes:

- (a) Feed (wet cake) into existing steam tube dryer system is taken from facility record as the average over the the 24-month period from January 2013 - December 2014.
- (b) Water content (% wt) and VOC content of water (lb VOC/lb water) taken from May 22, 2014 ATSD, Appendix A, Page 8 of 23, for permit T029-32119-00005.
- (c) Methodology and Sample Calculations:
VOC (ton/yr) = Dryer Feed Rate (ton/yr) x Water Content of Feed (% by wt) x (lb VOC/lb water)

$$\frac{158,894 \text{ ton}}{\text{yr}} \times 66.66 \% \text{ wt} \times \frac{0.006 \text{ lb VOC}}{\text{lb water}} = 635.5 \frac{\text{ton VOC}}{\text{yr}}$$